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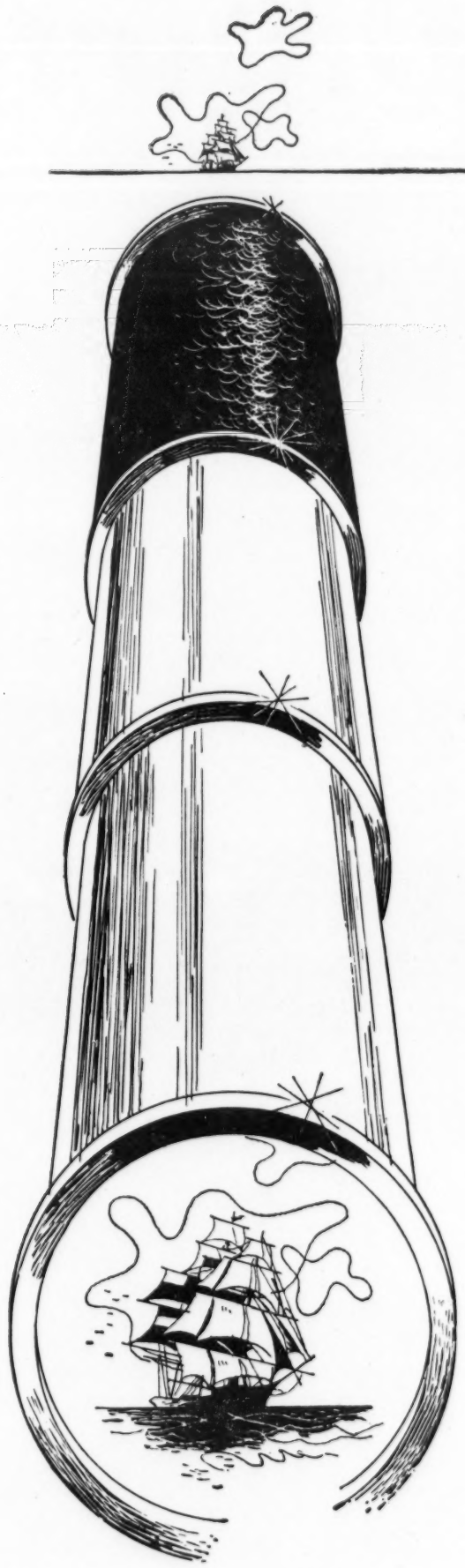

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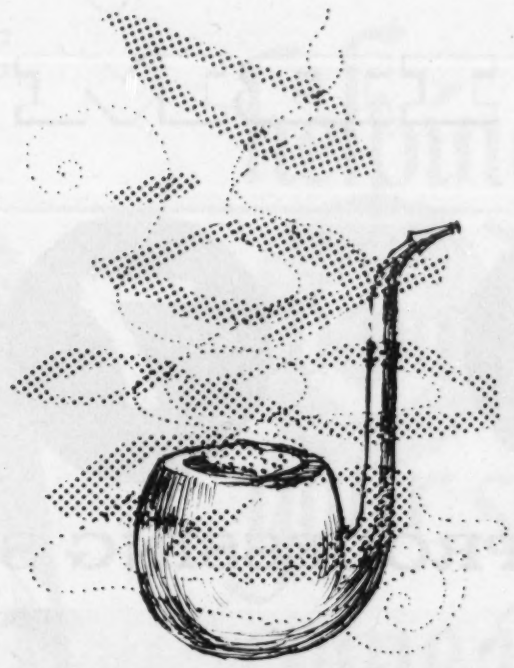

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THE
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VOLUME XXIII NUMBER 4 — WINTER 1958

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Editorial

In the course of one recent seven-day period, the daily press informed us that henceforth we would have to pay more for such things as rail freight transportation, telephone service, and our daily newspaper. We don't object so much to spending a few dollars more each year on these things, but where and when will it end? Many economists and government leaders tell us that inflation is the greatest threat facing the U.S. and Canada today — H-bombs and I.C.B.M.'s included. We're spending billions on the latter external threat. How well are we doing on the former? Obviously, not very well.

With the seriousness of this situation, we fully concur. Inflation is a vicious and insidious thing, and our society may well stand or fall on how it meets this challenge. Certainly, the consequences of failure are terrible to contemplate. It seems safe to say that our government will not and cannot tolerate it happening; unless business puts its own house in order, the government will.

Many of our business leaders fully recognize the problem and have tried to act responsibly in the face of it. To do so has not been easy; it has meant strikes, red ink, and loss of market to competitors who have taken the easier way out. When such consequences are considered, it is perhaps amazing that business has tried to hold the line to the extent that it has. After all, the firm has a responsibility to its shareholders as well as to the general public.

The basic fallacy of "giving in" should be obvious, however. Looking past the end of one's nose should make it clearly apparent that *everyone's* interest—shareholders, employees, consumers, and the public alike—dictates that we control this inflation. Unfortunately, too few businessmen have looked so far ahead. Unless they start doing so soon, they may find that the power to act is taken out of their hands.

Bruce Hutchison, writing on this subject, has asked: "Is Democracy Obsolete?" One of his main concerns was with the ability of individuals to do anything to control inflation. But the question applies to individual businesses as well. It is too easy to say, "What our business does can't possibly affect the total picture. I can't carry the ball alone." The plain truth is that business *must* hold the line, if necessary alone. Make no mistake, it will hurt. But it will hurt less to lose a finger than to lose one's life.

Undoubtedly, all the businesses that are now busily raising prices have had good reasons for so doing. Unquestionably labour, government and consumers have responsibilities to hold the line too. But the fact that these other groups sometimes do not appear to be doing their share does not excuse us from our responsibility—to ourselves, our consciences and our children, if not to our pocket books.

FAITH

The pioneers who came to this continent had faith or they would not have come. When a man starts a business, even a small one, he has faith that he can succeed.

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About Our Authors

Aldine Nixon received her B.A. in Business Administration at the University of Western Ontario and has worked for a number of years on the research staff of the school.

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(continued on next page)

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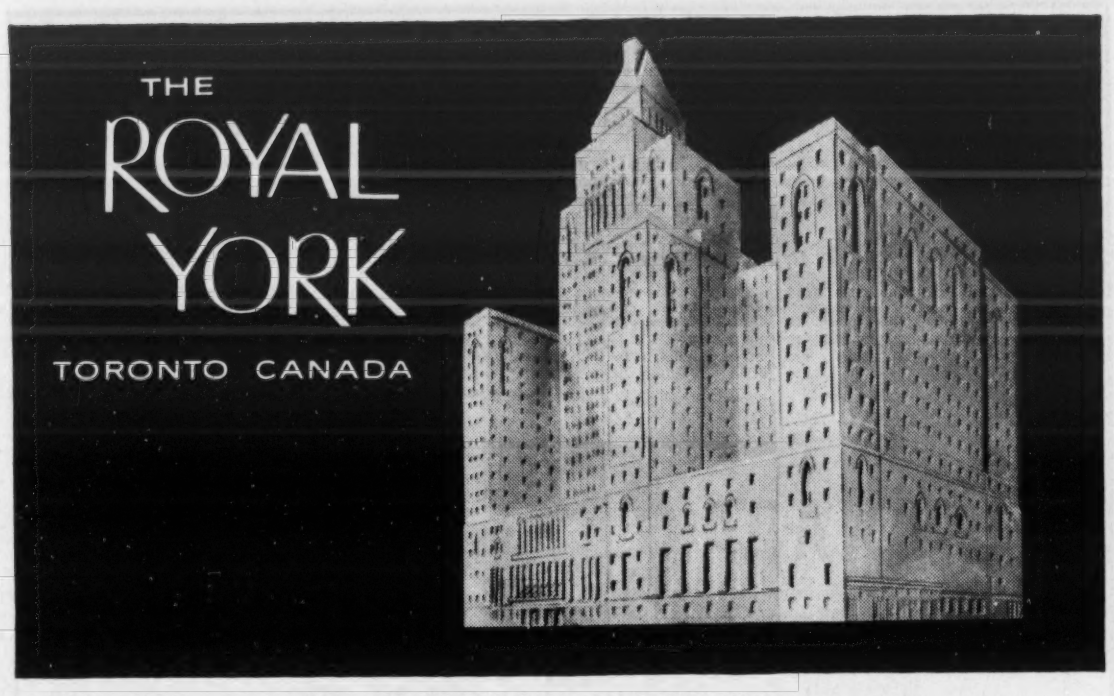

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About Our Authors cont.

tern's Physics Department in 1948 he attended Imperial College, London, England, as a student and later as a staff member. In addition to his undergraduate teaching, he directs the research of the Molecular Excitation Group made up of about 12 colleagues and graduate students. Their research work is closely related to astrophysics, atmospheric physics, auroral physics, combustion radiation chemistry and missiles. He is a member of a number of scientific societies, the International Astronomical Union and the International Union of Terrestrial Magnetism and Aeronomy.

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Ottawa Newsletter

PATRICK NICHOLSON

Our familiar green-curtained sleeping car and the seigniorial buffet-parlour car will disappear as long-haul rail passenger traffic increasingly gives way to the airlines over the next two decades.

This revolutionary change in our travel habits has been confidently forecast by both airline and railroad executives. It can equally be predicted by anyone who troubles to compare the present and predicted timetables and fare charts of, say, Trans-Canada Air Lines and Canadian National Railways.

The year 1960 will see the arrival of the Jet Age on our national air lines. The huge jetliners to be delivered to T.C.A. just over one year from now will each carry 125 passengers at the fantastic speed of 550 miles an hour. One jetliner could carry you between Ottawa and Vancouver 13 times while our fastest transcontinental railway express makes the journey once. This is a greater advance in travel ease than the iron horse itself achieved over the prairie schooner.

This milestone in our scientific development presents us in Canada with a challenge; seized courageously and harnessed imaginatively, it can bring greater advances in prosperity and living conditions to us than to any other nation. For at one stroke it will eliminate the disadvantages of distance under which our scattered population has hitherto laboured.

The former Liberal Government perceived this opportunity and wisely planned to meet it. As it became more immediate, the present Conservative Government has leaped decisively forward to grasp this exciting challenge.

The 50-yard-long giants of the air, weighing well over one hundred tons with a full load, will raise staggering new problems for our airport operators while they will reduce the worries of the airlines.

Airports with short runways, designed to support much lighter planes, and small passenger accommodation, intended to handle only the wealthy and adventurous few, must now be radically redesigned to handle the majority rather than the minority of our travellers.

The Jet Age traveller will demand "parlour car" comforts and jet service at airports; no longer will Dorval, Uplands, Malton, Gander and our other "20th Century Black Holes of Calcutta" be able to thrust on him shanty-town squalor which would have been acceptable to his travelling pioneer grandfather.

Chambers of Commerce will begin to urge their municipalities to replace the slow road to their local airport with an elevated throughway, or perhaps with a monorail such as is being considered to link London with its huge airport in England. Heathrow already handles 50% more passengers than Britain's busiest seaport, as 15,500 arrive or leave each day on 600 airliners.

Evidence of our government's foresight has been its willingness to act as fairy godmother to air transportation, in the matter of providing terminal facilities. It will finance and construct the runways, taxiways, lighting systems and aids to navigation needed at any airport served by scheduled airlines. No government ever did as much for our railroads or trucking companies or even shipping lines. But this policy alone has made us ready to greet the Jet Age.

Our government today operates no less than 115 airports across Canada.

After collecting all landing fees, concessions and rentals, it is costing the government about $5,000,000 to operate these airports this year—excluding any account of depreciation and interest on the capital cost. Only at Toronto, Montreal, Winnipeg and two very small airports did the government get out of the red last year.

Now the government has just extended its policy to include three types of airports which would not be served by scheduled airlines. It will contribute up to $100,000 towards the cost of building and equipping any airstrip, where this is needed (i) for the opening up of major natural resources, (ii) for transportation by communities periodically deprived of normal transport by climatic conditions, and (iii) for prestige purposes, to improve the status of a municipality which wishes to keep up with the Jet Age Joneses. Thus the aeroplane will be utilized fully to assist the implementation of the Diefenbaker "Vision" of the development of our northern resources.

To date, the government has wisely allocated all available money firstly to assuring maximum flying safety, by installing the best possible radio and radar aids to navigation and airstrip illuminations and light signals. Now, appropriately on the eve of the new mass air travel opportunity, the government is beginning to spend money on passenger facilities on the ground.

The airport buildings across Canada will tend to follow the Malton pattern of several "island aeroquays" grouped around a central administrative building. Each of these doughnut-shaped aeroquays will resemble a railway station in facilities, self-contained, with aircraft stands, and fully equipped to service both airliners and passengers—and spectators —at 1960 standards.

Washington Newsletter

JAMES M. MINIFIE

The November election results disclosed for the first time the power of union labour to focus votes. It defeated in five out of six states, and notably in the industrial states of Ohio and California, the so-called "right-to-work" proposals, which labour regards as a return to the open shop.

Labour is reported to be planning to exploit its victory on Capitol Hill next session. The objective would be repeal of that section of the Taft-Hartley Act which authorizes states to pass right-to-work legislation. These laws have already been adopted in 19 states. Every Southern state with the exception of Louisiana, has them on the books. They are one of the attractions held out to migrating industry by the South in the guise of "reasonable" labour.

Conservative Southerners will oppose recall of states' right to legislate on labour matters. This will emphasize the split between conservative Southern Democrats and Northern liberal Democrats. The split will be carried over into debates on Senate Rule 22 and on civil rights. Rule 22 permits unlimited discussion—the "filibuster". This weapon is the South's chief defense against civil rights legislation which the Democratic liberals are bound to propose.

In the old days the South could rely on the support of the Northern Republican Old Guard. But the same election which returned so many Democratic liberals also decimated the Old Guard. Barrett of Wyoming, Bricker of Ohio, Jenner's boy Handley of Indiana, Malone of Nevada, Martin of Pennsylvania, Payne of Maine, Revercomb of West Virginia, Smith of New Jersey either retired or were defeated. The South can not hope for support from their successors.

If numbers were the only criterion, amendment of the Taft-Hartley Act would be certain. But American opinion is nervous about the power of labour. Senators who may have been elected by the labour vote will recall that it was not the only factor in their victory. It was often a marginal factor. They will not want to antagonize the other elements which supported them. Labour leaders are generally aware of this instinctive repugnance of the average American to the idea of a "third party", even if it be a nameless party exercising its influence through one of the traditional parties. It is reconciled to pressure groups or blocs, although it does not like them. But there is no room either in the voting laws of many states or the practical machinery of congressional organization, for a third party, still less for a "class" party. Labour must carefully avoid appearing to set up in politics for itself unless it wishes fatally to compromise its hopes of killing right-to-work legislation.

Labour must also avoid being made the scapegoat for inflation. President Eisenhower was asked at a press conference last summer what he blamed for rises in the cost of living despite his efforts to hold the line. He loaded most of the responsibility on to labour's escalator wage contract, with no more than a nod at the habit of big steel, which was under discussion at that time, to meet every wage increase with a sturdy round of price hikes. The President's bridge and golfing friends are service and industrial brass; the slogans current among them often reappear in the President's press conference remarks.

Such a sounding-board builds up their reverberations; they could determine the issue of the complex struggle in which organized labour will be involved on Capitol Hill next session.

Finally, labour must clean its own house. The Labour-Management investigation under Southern Senator McClellan has concentrated on union sins. They have been sufficiently lurid in some cases to give its enemies ammunition and its friends concern.

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Poll of Executive Opinion

Business Prospects for 1959

What will be the trend for sales, costs, profits among Canadian businesses in 1959? What do the people who will make the key decisions see ahead of us? For a number of years, The Quarterly has conducted an annual Poll of Executive Opinion. The results of this year's poll are outlined below.

ALDINE NIXON AND LOUIS HOLLANDER

The ninth annual Poll of Canadian Executive Opinion by the School of Business Administration of the University of Western Ontario reveals that the outlook for 1959 is considerably better than it was a year ago. However, increased raw material costs and higher wages have become a major concern, and these adverse factors are expected to prevent earnings from increasing to as great a degree as sales and production. Few firms intend to increase prices to a larger extent than last year, even though they expect a sharp rise in labour and raw material costs.

The following highlights may be drawn from the results:

1. Most executives are of the opinion that the level of the general economy will rise in 1959: prices will increase; the level of employment will be higher; wages will rise.

2. Production is expected to increase, and as most companies do not intend to produce for inventory, unit sales will also rise.

3. Sales effort will not be intensified: advertising expenditures and the number of salesmen employed are expected to remain constant.

4. Capital expenditures will remain constant.

CROSS SECTION OF INDUSTRIES POLLED

The proportion of large firms to medium-sized and small firms polled this year was the same as for 1957. However, the proportion of manufacturing to non-manufacturing firms was slightly altered from that in 1957. This is shown in Table 1.

TABLE 1

Total Number of Replies, Size, and Type of Industries Surveyed

	1957	1958
i. Total number of replies	153	139
ii. Size of industry—		
Large firms	55%	55%
Medium-sized and small	45%	45%
iii. Type of firm—		
Manufacturing	78%	73%
Non-manufacturing	22%	27%

Table 2, which follows, shows the breakdown of the industries surveyed. In selecting a sample, an attempt is made to obtain proportional representation of each industry in Canada, and the breakdown given below indicates that a reasonable representation has in fact been obtained. Since no attempt is made to project the sample results to a precise figure for Canada as a whole, the sample may be considered as adequate for our purposes.

TABLE 2

Cross Section of Industries Polled

Food and kindred products	12%
Pulp, paper and printing	10
Electrical equipment and products	10
Trade, wholesale and retail	9
Finance, insurance and real estate	9
Iron and steel and products	7
Textiles and apparel	6
Chemicals and allied products	6
Machinery	6
Lumber and finished lumber products	3
Petroleum and coal products	3
Transportation equipment and other manufacturing	3
Transportation, storage, and communications	3
Services	3
Leather and leather products	2
Public utility operations	2
Mining	1
Rubber products	1
Stone, clay and glass products	1
Others	3
	100%

THE PREDICTIONS

Executives comprising our sample were questioned regarding the trends they expected in two broad areas: (1) the indices which would indicate the course of our national economy during 1959; and (2) the figures which would measure the expected performance of individual companies in 1959. The significance of these expectations lies in comparing them with those for 1958. This indicates rather markedly the differences in outlook of business executives for 1958 and for 1959, and emphasizes the change in business conditions in Canada over the intervening period of one year.

Table 3 shows a summary of these findings compared with those of last year. It is clear that anticipation of increased prices and labour costs is more widespread than last year. However, the outlook for increased production and higher employment has improved considerably as well.

In terms of individual companies there is a more general anticipation of greater sales and a higher level of production, although fewer executives expect their firms to be producing for inventory. Prices for raw materials and the cost of labour are both expected to increase by a greater section of those polled, but prices of the companies' own products are not expected to be increased to a greater extent than they were last year, and consequently the earnings picture is not as bright as that for sales and production. It is thus perhaps significant that capital expenditures are not expected to increase, and neither is sales effort, as shown by the expected number of salesmen and the expected spending on advertising.

TABLE 3

Indices	1958 Poll			1959 Poll		
	Increase	Constant	Decrease	Increase	Constant	Decrease
	%	%	%	%	%	%
Consumer Price Index	50	43	7	75	24	1
Wholesale Price Index of Industrial Materials	27	56	17	55	44	1
Index of Industrial Employment	14	54	32	56	41	3
Index of Industrial Production	13	56	31	61	37	2
Wages and Salaries of Industrial Workers	73	27	0	90	9	1
Individual Companies						
Total Unit Sales	56	33	11	74	23	3
Total Physical Volume	61	26	13	75	22	3
Earnings Before Taxes	47	31	22	54	34	12
Production for Inventory	22	57	21	18	76	6
Orders for Raw Material	52	33	15	68	28	4
Prices for Raw Material Purchases	37	51	12	51	45	4
Prices of Products	32	63	5	34	61	5
Average Labour Force	21	61	18	26	67	7
Number of Salesmen	34	66	0	31	67	2
Wages Paid	79	20	1	88	12	0
Advertising Expense	31	63	6	32	65	3
Capital Expenditures for Maintenance	23	54	23	23	60	17
Capital Expenditure for Expanding Plant	27	36	37	27	43	30

It is usually interesting to break down the outlooks by industry for sales and earnings where there have been sufficient responses from a particular industry to make the figures significant (Table 4). As might be expected, there are differences within the industries themselves depending on the strength of individual firms. However, it is possible to discern that the weaker sectors of our economy are likely to be such as food, electrical equipment, textiles, and pulp and paper. The stronger ones will likely be finance, iron and steel, and chemicals and allied products.

TABLE 4

Anticipated Sales and Earnings in the Polled Industries

	Sales	*Earnings before Taxes*
Food and kindred products	70% – expect increase 30% – stable	25% – increase 70% – stable 5% – decrease
Pulp, paper and printing	50% – increase 43% – stable 7% – decrease	50% – increase 43% – stable 7% – decrease
Electrical equipment and products	78% – increase 14% – stable 8% – decrease	43% – increase 43% – stable 14% – decrease
Trade – Wholesale and Retail	83% – increase 17% – stable	55% – increase 27% – stable 18% – decrease
Finance, insurance and real estate	92% – increase 8% – stable	77% – increase 15% – stable 8% – decrease
Iron and steel, and products	70% – increase 20% – stable 10% – decrease	70% – increase 20% – stable 10% – decrease
Textiles and apparel	89% – increase 11% – stable	50% – increase 13% – stable 37% – decrease
Chemicals and allied products	88% – increase 12% – stable	86% – increase 0% – stable 14% – decrease
Machinery	67% – increase 33% – stable	56% – increase 22% – stable 22% – decrease
Lumber and finished lumber products	75% – increase 0% – stable 25% – decrease	67% – increase 33% – stable
Petroleum and coal products	75% – increase 25% – stable	100% – increase
Transportation equipment and other manufacturing	100% – increase	100% – increase
Transportation, storage and communications	67% – increase 33% – stable	67% – increase 33% – stable
Services	100% – increase	100% – increase
Leather and leather products	sample too small	
Public utility operations	sample too small	
Mining	sample too small	
Rubber products	sample too small	
Stone, clay, and glass products	sample too small	

PERSONAL VIEWS

Personal opinions are always of great value, and some of the ones that were received are included here:

"Our forecast for automotive production of new cars for 1959 is up 5% from actual 1958 production." (Medium sized Iron and Steel Products)

"We anticipate 1959 to be a good year for our business. Diversified industries in this area have not been at top production on the whole, but we feel improvement is likely in 1959, and we have a good increase in population and home building." (Large retail)

"A large part of our business is export to the United States and the relationship of the U.S. dollar to the Canadian dollar has a material effect on net sales realized and on net profits." (Large Pulp and Paper)

"Future of Textile Industry depends so greatly on action of our Government, particularly in connection with imports from Japan and other Asiatic countries, that it is difficult to forecast with much confidence." (Medium-sized Textile and Apparel)

"Wages will continue to rise in a levelling economy." (Large Transportation Equipment Manufacturer)

"Volume through plants depends to a great extent upon livestock production. The movement of cattle to the United States will curtail domestic slaughter, but this should be offset by heavier hog-slaughter." (Medium-sized Food)

"Our optimism is based on having completed and moved into a new and larger plant, in October 1958. The reason for this new plant is that larger manufacturing facilities were required." (Chemical and allied products—medium size)

"Questions relative to our particular business do not necessarily reflect on our opinion of the future general economy." (Small—Textiles)

"The increase in consumer price index and all other price increases which we indicate will, we believe, be the result to a considerable extent to increased transportation costs." (Large—Textiles)

"As our business is affected to a large extent by the manufacture and sale of automobiles, the optimism indicated above is based on the recent results of contract settlements in the U.S.A. which indicate stability through better Management-Labour relations over the next three years." (Medium size—retail).

"Although the "margin" (from net profit) required to cover amortization, dividends, and new product development will not leave anything in the electrical manufacturing industry in 1958 for wage or salary increases, the pressure is there and will be responded to always. Hence our guess is the foregoing—wages, etc. will go *up* (adding to inflation) and prices *must* go up to complete the cycle. Demand will not change much, so building and expansion will be kept down. Prices will be resisted, hence lower profits." (Medium size—Electric Equipment)

"Continued inflation!!" (Medium size—Food)

"We believe that inflationary pressures will affect 1959 operations. We cannot see this problem lessening in the foreseeable future." (Large—Food)

"Excess capacity of Canadian industries in our lines has driven prices much below costs and is forcing weaker (financially) industries out of business due to continuing losses. There may be serious unemployment in some areas." (Medium size — Lumber Products)

"The proposed increases in rail rates, auto workers' wages, steel workers' wages, etc., are bound to increase material costs in 1959, hence increased prices — dollar volume — taxes — earnings. Housing continues at a rapid pace which directly affects the furniture sales." (Medium size—Lumber)

"This company has always been very conscious of the winter unemployment problem. With a view to contributing to a certain measure of stability in this sector of the economy, we have decided to increase our permanent labour force and consequently to reduce our seasonal demand for temporary workers during the Spring and Summer months." (Large—Food)

"The Index of Industrial Production will decrease in 1959 because the level of imports is too high." (Medium size—Lumber)

"The Consumer Price Index could increase or stay at the same level in 1959, but I believe strenuous efforts will be made to hold the line, despite rising costs." (Medium size—Banking)

CONCLUSIONS

Each reader will no doubt draw his own conclusions from the tables. However, the highlights are noted here:

The outlook for 1959 has improved considerably from that for 1958, although increased costs are expected to become an even greater problem, and will have an adverse effect on earnings as firms do not expect to increase prices on their own products to any greater extent than last year. After the wave of expansion of productive capacity over the last several years, it appears that capital expenditures for this purpose have, temporarily at least, reached a constant level.

CANADA: *The Design of Social Change*

Recent decades have wrought tremendous changes in our Canadian society. Some of these changes have been for the good; others have been of more dubious value. An appreciation of the nature and extent of these changes should be of the utmost importance to all businessmen, both as sellers or as employers. The author, a distinguished Canadian social scientist, describes the changes that have taken place.

ALBERT ROSE

The tempo of change in Canadian society has increased so rapidly during the past 20 years that there is literally no comparable period in the history of mankind. Whereas change used to be measured in centuries or half-centuries, we have become so conditioned to innovation that we now contemplate and even demand, in our ignorance, the fulfillment of fantastic achievements within months or a year or two. On this continent particularly, where it remains theoretically possible for every boy to grow up to become prime minister or president; or, where it remains theoretically possible for every individual to move up or down the scale from the social class of his parents, there is tremendous emphasis upon the material or physical or tangible aspects of the standard of living of society. Yet even this is changing.

Each year in Canada for nearly 20 years, records have been set in most of the indicators of well-being: national income, total labour income, employment, weekly and hourly wages, retail sales. It is sometimes forgotten, however, that we are also setting a great many records of a different kind: governmental expenditures at all levels, prices and the cost of living, the number of working mothers, the incidence of mental illness, the rate of illegitimate births, divorce, juvenile delinquency and crime by young adults, and even, from time to time, record unemployment.

While all these records are being set and politicians and economists are sometimes pointing with pride and sometimes viewing with alarm, we tend to lose sight of the individuals and families who comprise our nation. It is a great source of satisfaction to observe that our gross national product in 1933 was slightly less than $3½ billions; in 1958 it is likely to be more than $32 billions. The fact that these are overall national figures must be emphasized as often as possible. The truly significant questions are concerned with the distribution of the total national income. How was it shared? How is it being shared? Has our high level of economic activity and prosperity since 1939 brought commensurate gains to our people and particularly to our families? What is the impact of such rapid change upon Canadian families and Canadian family life? In order to consider answers to these potentially-meaningful questions the elements of change must be recorded and the evidence, both favourable and unfavourable, weighed carefully.

THE COMPONENTS OF CHANGE IN CANADIAN LIFE

(a) *Population*

It is now general knowledge that Canada's population has increased from approximately 11¼ millions in 1939 to more than 17 millions at mid-year 1958. There is much less appreciation, however, of the fact that such rapid growth in population is unprecedented in this and a great many other countries, and there is even less knowledge of the elements within this growth. An increase of more than 50% in our population in less than 20 years is, in the view of the specialists in population analysis, fantastic. Moreover, such increase is not, as some people believe, largely due to immigration from abroad, which has amounted to more than 1¼ million persons since 1945. It is primarily the result of the combination of one of the highest birth rates in the world and a continuously decreasing death rate.

New births in Canada are now approaching 500,000 per year and exceed deaths by more than 350,000. Together with immigration (less emigration) they account for a net annual increase in the Canadian population of about 500,000. The significance of these new births extends throughout many facets of our national life but in one respect can be readily appreciated—it is estimated that an additional $300 millions in consumer goods are required annually for these new babies, that is, food, clothing, furniture, pharmaceuticals and so on.

By 1957, it was reported that one-third of the total Canadian population was under 15 years of age, that is, about 5½ million children. We are all aware that the full tide of this flood has engulfed our elementary schools, has reached our high schools and will, by the mid-1960's, more than double present enrollments in Canadian universities on the basis of present standards of admission.

At the other end of the age distribution Canadians are tending to live longer in substantially-increasing numbers. Nearly one in every eight Canadians is now over 60 years of age and one in every 12 is now over 65 years of age. In absolute terms this means that nearly 1½ million Canadians are at least 65 years old and about 2¼ million are at least 60 years old.

The major implication of these facts concerning the two extremes in the Canadian age distribution is quite simple. The proportion of Canadians in the most productive years—ages 20-59—is about 50%. For the first time in our history half the population, generally speaking, must support the other half. This ratio of productive to dependent persons in our society has been decreasing since 1929 but will probably remain as it is for two or three decades in view of the rapidly-increasing numbers of young people and old people in this country. It is recognized, of course, that many persons over 60 continue to be productive even beyond 70 years of age, and that some persons under 20 are in employment. Nevertheless, this ratio is an interesting facet of age distribution which suggests the distribution of independence and dependence in our society.

(b) *Urbanization*

Canadians are now for the most part city dwellers and increasingly are to be found within the 15 designated metropolitan areas in this country. A good deal depends, of course, on the census definition of "urban" and "rural" but there can be no question of the direction of the trend. In the census of 1901, 65 of every 100 Canadians were considered "rural dwellers"; by 1931, the rural-urban ratio was almost 50-50; by 1951, 54 of every 100 Canadians were designated "urban dwellers" and the ratio to-day is probably 60-40 in favour of urban residents.

More particularly, we must recognize that much of our population growth is occurring within a very few metropolitan cities. About half of the total increase in population in Canada between 1951 and 1956 occurred in 15 metropolitan areas, where the increase in this period was 19.3%. Approximately 40% of Canada's population in mid-1956 resided in metropolitan areas. The Report of the Royal Commission on Canada's Economic Prospects (The Gordon Commission) suggests that nearly two-thirds of our population will reside in these cities by 1980 and that perhaps 80% of us will be urban dwellers.

The ramifications of these urban concentrations of population are widespread and of profound significance. A detailed analysis is beyond the scope of this paper. It is important to realize, however, that urban boundaries are becoming more and more blurred and there is emerging an agglomeration which has been called "the regional city". For example, some community planners believe that there has already emerged one huge city stretching from Oshawa to Hamilton in Ontario. The president of the Community Planning Association, Mr. C. E. Campeau, a distinguished planner and member of the federal parliament, has recently pointed out that whereas the city used to be an incident in the countryside, the countryside has now become in many places, an incident within the regional city.

(c) *Mobility*

In this era of rapid population growth, urbanization and industrialization, a high degree of mobility seems to be characteristic of our mode of living. In part this tendency is implicit within the organization of modern industrial and commercial organization. It is the deliberate policy of some employers to move employees who are considered to be potential executives from one department to another and from one plant to another. These movements are not merely interurban or interprovincial but may be international.

During the summer of 1957 more than 700 families were interviewed in a number of communities in Ontario in the course of a study carried out under the auspices of the School of Social Work at the University of Toronto. These interviews revealed a high degree of occupational and residential mobility. In fact, 60% of these families had lived in their present dwellings less than four years; only 15% of families had not moved at all since the end of World War II. Moreover, almost half of the families revealed that they had lived in their pre-

vious home (the one before the 1957 residence) less than four years. A report of this study concludes, "By almost any standard . . . a high degree of physical mobility is apparently a dominant characteristic of our society".

The main implications of frequent family movement upon the individual, upon family life, upon the community, are largely unexplored. We do know, however, that for some individuals and some families there are profound effects—upon children, upon mothers, upon parents, upon grandparents. Nevertheless, the report of the study mentioned previously points out that ". . . we can scarcely ignore the potential significance in this connection of the high premium which our society places on upward economic and social mobility".

(d) *Income*

Income is the lifeblood of our economic and social system. Canadians in recent years have produced goods and services with a market value about six times greater than the best years of the 1930's and about 10 times greater than the worst years of that decade. Even when we take into account the fact that total population is 50% greater and that prices have doubled since 1939, it is probable that per capita purchasing power has doubled in less than 20 years. Income per capita in simple dollar terms has quadrupled, and is approaching $2,000 per annum. As an interesting illustration and comparison we might recall that the Minister of Finance for India pointed out in Canada recently that annual per capita income in his country was about $60.

Many figures are published each year on the subject of the earnings and incomes of Canadians and all of them require careful examination before use and quotation. For example, the change from one year to the next in the total national income must be examined in relation to the price level. Is an increase of 5% due to an increase of some 5% in prices or the result of greater production of goods and services at fairly steady prices? A pie may look larger but there may be no more fruit in it and even less fruit than last year.

We have to be particularly careful with averages. It is a fact that in mid-1958 average weekly wages in industry in Canada were $70.76 and in Toronto were $74.22. These figures do not mean, however, that exactly half the employees got less and half got more than the average weekly wage. Nor do they tell you how high weekly wages were in certain industries and how low in others; and how many persons in a specific community were in the higher-paying or lower-paying jobs. The most recent estimates indicate that the upper limit of the lowest third of family incomes in Toronto is approximately $4,450. Yet the industrial worker with average weekly earnings is in receipt of less than $3,900. There is a firm indication here that many families in Toronto have a family income to which more than one wage earner contributes. Toronto incomes are not, of course, typical of other Canadian urban centres. The estimated upper limit of the lowest third varies from $3,100 in St. John's, Newfoundland to $4,500 in Hamilton, Ontario. The figures for Montreal are $4,050; for Winnipeg $3,850 and for Vancouver, $4,350.

Most of us have not been fully conscious of the substantial increase in total family incomes during the past eight or 10 years. If it were not for this fact the years of prosperity and the higher material standard of living we accept so blithely would not in fact exist. We have to realize that average weekly earnings are three times what they were in 1939; that the upper limit of the lowest third was about $1,200 in the Census of 1941 and is today about $4,000 for all Canadian non-farm families. We must be completely aware, as well, that it is far more common than it was 20 years ago for wives, mothers, and other family members to work full or part-time to support the expenditure patterns of the family.

Interestingly enough, it has been possible for many workers to achieve these higher wages for a considerably shorter working week. On the average, in 1944, industrial workers worked a little more than 46 hours; by 1950 this average was a little more than 42 hours; by mid-1958 the average working week in industry in Canada was 40.7 hours. In some industries, of course, the working week is longer, but in others the current average is less than 40 hours; this is not necessarily due to scarcity of work but is a part of the overall improvement achieved by labour during the past 15 years.

A shorter working week should mean, of course, increasingly great leisure and a whole series of implications for family living. What it does appear to mean for an increasing number of families, is a second job for father on a part-time basis on the weekend or his day off. While there is no reliable statistical data on this point, the tendency is unmistakeably clear.

(e) *Employment and Labour Force*

The total labour force is composed of all those persons who are either working or have jobs from which they are temporarily absent or are seeking work. This group represents the total supply of labour available at a given time. At the end of the war this labour force in Canada numbered approxi-

mately 4,500,000; by mid-July of this year the comparable figure was 6,200,000. The annual increase depends upon a number of forces including the availability of jobs, but is at least 100,000 persons and sometimes as many as 200,000 persons. Nevertheless, it is clear that our national economy has been asked to provide about 1¾ million additional jobs since 1946. To a substantial degree we have succeeded in this tremendous task. The most serious periods of unemployment have occurred, as we might expect, during the winter months, particularly during 1949-1950, 1954-1955 and 1957-1958. In the earlier periods of recession, however, unemployment was all but wiped out by the following summer. This time we are not so fortunate for even in mid-July 1958, the official figures show 286,000 out of work and seeking work, approximately 4.6 percent of the labour force. This in itself is not serious but at one point last winter one in every 10 Canadians in the labour force was unemployed.

Almost one in four Canadians in the labour force is a woman, about 23% in fact. This proportion has been remarkably constant for the past five years although it increased steadily during the war and postwar years. It is reliably estimated that approximately one-third of these women are married although it is not known how many of these married female workers have children. In some industries the percentage of women employed is far above average, for example, in the clothing industries, 70%; in trade (retail and wholesale), 36%; in finance, insurance and real estate, 50%; in service industries (laundries, dry cleaning plants, hotels, restaurants), 47%.

Since the Canadian family and its living conditions is the concern of this paper it is the proportion of working wives and mothers which is most significant. Working wives make up at least 8% of the labour force, that is, nearly 500,000 persons. In a recent study sponsored by the Women's Bureau of the Canadian Department of Labour carried out in co-operation with the eight Schools of Social Work in Canada, the prime reasons given for seeking employment were economic. Married women said they work to help pay for a house or to save for a house, to pay for automobiles, television sets and costly vacation trips. While some of those interviewed felt that there were social and emotional components in their employment as well, and that they might be better mothers as a consequence, few ventured beyond the need to satisfy tangible elements in the family standard of living.

The most important point to note here is the undeniable fact that many Canadian families are increasingly dependent upon the incomes of two or more persons. Their standard of living and its cost is determined and provided for only in this fashion. What happens to many of these families during a recession or a period of serious unemployment has not been studied in great detail. There can be no doubt that a time of adjustment or readjustment may be a most painful experience. On the other hand, two unemployment insurance benefits are surely better than one.

(f) *The Canadian Standard of Living*

It is frequently stated that the Canadian standard of living is "the second highest standard of living in the world". What is meant by this statement is a simple fact — Canadians do have per capita more goods and services than the people of any other nation with the exception of the United States. We have so many automobiles that our transportation and communication facilities are close to strangulation in urban traffic; almost every family has a television set where reception is possible; most of our families abound in radios, washing machines, mechanical refrigerators, clothes dryers, ironers and smaller appliances. Food and clothing are abundant in Canada. Housing is still in short supply, particularly in view of the need for low-rental housing, but is far more abundant than 15 or 20 years ago. The health conditions of Canadians are generally satisfactory and our standards of medicine and public health are relatively high. Millions of Canadians have joined voluntary or governmental prepayment programs to meet the very high costs of illness and hospitalization.

Even with respect to the intangible aspects of our living standards there has never been a more promising era. Leisure time is more abundant and vast quantities of energy and money are being devoted to the effort to make leisure time more constructive. In general, Canadians are far more interest-conscious and group-conscious than ever before. The level of interest in cultural activities — art, music, drama, sculpture, ceramics—has never been so high. It is recognized that not every critic is satisfied with this level, with the standard of such activities, with the new directions in art or music, but these considerations are beyond the province of this argument.

The fundamental question that is being posed at this point is, simply, "Are Canadians and Canadian families relatively happy, relatively well-adjusted, relatively more able to avoid social breakdown, than in past decades?" Needless to say there are no measures of absolute happiness and the well-adjusted state may be one which none of us would like very much. Nevertheless, some of the facts concerning social disorganization and social breakdown in Canada merit some examination, lest we be carried away in our loyal and joyful flood of automobiles and appliances.

(g) *Social Breakdown in Canada*

By social breakdown we mean the inability of an individual or family to function in society in what is considered an acceptable mode of living and behaviour without the help of some voluntarily or publicly-provided service. In a general way it might be noted that Canada leads the world in drug addiction and tobacco consumption. A year ago the London *Economist* revealed that we have 220 narcotic addicts per million of population and that we consume 6.9 pounds of tobacco per person per year. There may be special reasons for these figures, but it would appear that our prosperity and high standard of living have in no way diminished our need for sedatives. Recent studies in the field of alcoholism confirm this view. Reliable figures have not been available for many years but the more recent measurements indicate a rapidly rising rate of alcoholism in this nation. We may not drink as much per capita as some other nations but we seem to break down relatively easily.

On the other hand Canadians are generally not prone to suicide or homicide. Our rates of seven suicides and one homicide per 100,000 population are relatively far down the list among the nations. Nevertheless the problem of mental illness in this country is extremely serious. It has been estimated that mental illness fills half of all hospital beds in Canada. One person in 10 suffers some form of serious emotional illness in his lifetime, and one in 20 is at some time a patient in a mental hospital or under psychiatric care. Our national rate of illegitimacy, however, at 3.7 per 1,000 live births, is low by the standards of many nations and our divorce rate is extremely low at 0.37 per 1,000 population in 1956.

Poverty is not a widespread problem in this country yet nearly one million persons, perhaps 6% of our population, are so lacking in the basic material essentials of living that they require financial assistance through public or voluntary programs, and an additional substantial group, unknown in size, are so close to the poverty line that fundamental insecurity is characteristic of their lives. The "poor", if we may describe them as such, would include nearly half of all Canadians over 70 years of age, perhaps a fifth of these between ages 65 to 69, widowed and deserted mothers with dependent children, neglected and dependent children who have lost or have been removed from their families, the chronically ill and unemployable, and a proportion of the blind, the physically disabled and the acutely sick. We have by no means wiped out poverty in this nation and we must recognize that many of these so-called "poor" families are miserably housed in this land of plenty.

WHAT IS HAPPENING TO THE CANADIAN FAMILY?

The picture thus far presented is one of tremendous, almost fantastic, growth and material gain. Nevertheless, there is some poverty in the midst of plenty and the governmental and voluntary programs designed to alleviate or prevent such poverty are extremely costly. There might be some argument concerning the implications of these developments from various points of view but, on the other hand, a more detailed examination of certain aspects of our living standards might prove disconcerting, for example, a detailed study of the plight of elderly people in our society. Old Age Security Allowances paid to everyone at the age of 70 will in a short time cost some $500,000,000 per year. About half of the recipients will have little or no income besides the monthly payment of $55. Old Age Assistance to those in need between 65 and 69 years is required by about one-fifth of this group and amounts, already, to some $150,000,000 per annum.

As interesting as some of these studies might be, we are more concerned in this paper with the effects of our most recent social and economic development upon the Canadian family. In the midst of generally high employment and income, during two decades of wartime and postwar prosperity the following facts and tendencies or trends have emerged:

1. *The Canadian Family is growing larger.*

All of the traditional explanations for our rapidly-growing population are considered unsatisfactory and even some of the newer explanations are unacceptable. It is impossible to accept, for example, the argument that we are having more and more children because in the atomic age we seek "something to hang onto". The delayed-marriage explanation of the war and early postwar years has run its course and still the high birth rate is maintained and increased. The fact is that a great many Canadian families have decided for one reason or another—we don't really know why—to have three, four, five or more children, whereas their parent families had one or two children. At the present time families with children under the age of 16 in receipt of Family Allowances have some 2.45 children, with others perhaps over the age of 16.

In the 1956 Census of Canada there were 3,711,500 families, almost 13% more than in 1951. It is interesting to note that in 1951, 24.7% were composed of five persons or more; by 1956 this percentage had increased to 27.2. Four-person families were approximately 20% in both years but smaller families were less significant in 1956. For families with both parents living at home and considering all children under 14 years for fathers aged 35-44 years, 21.7%

had three children, 11.5 had four and 11.1% had five or more children.

2. *The Canadian Family is Child-Centered.*

Sam Levenson illustrates this point aptly by asking "When do I get the white meat?" He explains that when he was a boy his father got the white meat; now that he is a father, his children get the white meat. The fact is, undeniably, that our children do get the white meat. Canadian parents are constantly and continuously conscious of their responsibilities as parents. They read about children, they talk about children, they join organizations concerned for and about children, and many of them work—18 hours a day, seven days a week—mainly for the care and sustenance of their children. It is little wonder that some mothers can only survive, they say, with an outside job accepted often before the child is in kindergarten but most often soon thereafter. Fortunately, so many of us are having so many children that the ability of any one parent to bore his colleagues with talk of his children is counterbalanced or exceeded by the ability of his colleagues on the identical subject.

3. *The Canadian Family recognizes certain needs as essential rather than optional or luxuries as in the past.*

The size and child-centred nature of the Canadian family has made it almost inevitable—given the income—that certain wants or luxuries of two or three decades ago should become essential needs. The hard-pressed Canadian mother literally needs all of the labour-saving devices she can afford if she is to survive physically and emotionally. Her day begins at seven a.m. and ends at midnight although she may be awakened frequently thereafter. Whether or not she saves labour which her mother had to expend, society demands far more from her than from her mother by way of intelligence, child care, health standards within the family, citizen participation in neighbourhood associations and the like. She can only meet these demands with the help of her husband and all of the mechanical devices he can afford to provide.

As urbanization has progressed and the Canadian family finds itself more and more often in a sea of treeless mud known as a suburban area, there is an increasing need for a second car in the family. Our children are the most thoroughly engaged and occupied children in history. They attend school, church, religious school, music lessons, other cultural groups, dancing lessons, sports events, and social affairs. Almost all of these are farther away from home than they were 20 years ago and the risks involved in traffic encounters are much greater.

4. *The needs of the Canadian Family are increasingly expensive to fulfil.*

The general acceptance and indeed inevitability that former wants and luxuries should become essential needs has added greatly to the financial burdens of the family. Few families have more income than they require and very few families are able to save for emergencies. In fact one income is often quite insufficient to maintain the reasonably modest living standards of many families, and the wife may seek employment not merely to meet unexpected medical expenses or time payments on the car or appliances, but simply to make ends meet.

It is often suggested by those who take a dim view of these tendencies that family life is being disrupted by the increasing number of parents who do not take their responsibilities seriously. The fact is that the modest small house is five or six times as costly as it was in 1939; automobiles are four or five times as costly; clothing is three or four times as costly—yet individual incomes have merely tripled and purchasing power has doubled. Even more to the point, the whole conception of the essential elements in the standard of living has changed drastically. The luxuries of the past are the essentials of to-day and they are far more costly than they were as luxuries.

5. *The Canadian Family often requires more than the income of the head of the household to support it.*

This proposition is now obvious and clear. It may be true that a proportion of working mothers are in employment because they are bored with housework and child-raising. It is far more likely, however, that they are in employment because their earnings—and they are by no means a net gain—make a very real difference in the family budget. This raises the possibility as well that a substantial proportion of the vast numbers of children will cease their formal education in high school as did their predecessors, despite the increasing emphasis upon formal education, because these young people and their families require their earnings to support the standard of living currently available and achieved. Socially this would be a catastrophe but the whole question of the social effects of these trends upon children and upon the family, remains largely unexplored.

6. *The Canadian Family requires greater efforts on the part of parents than in the past.*

It is hard to be a parent in contemporary Canadian life. Gone is the day when mother rose at six a.m., father at 7.30 or eight a.m.; when mother served father his breakfast behind the morning paper and later, had his dinner ready behind the evening paper.

Mother got up at night when the children demanded. After a week of such pampering father spent Sunday as his day of rest. More often than not today, both parents rise together, father makes the breakfast, the morning paper goes unread, father comes home and helps or prepares part of the dinner, bathes one or more of the children, reads bedtime stories, helps with the dishes, and then, reads the evening paper — if one of his progeny has not destroyed it or mutilated it. The week is seven days long.

Sam Levenson tells another story of his own father on this subject. Said his father to his sons, "I'm not your pal, I'm your father." To-day father is a veritable paragon of versatility. He is father, pal, part-time housekeeper, gardener, chef, chauffeur, shopper and, incidentally, breadwinner most of the time. Nevertheless, he comes back, presumably grinning, for more and more children.

CONCLUDING COMMENTS

There are some who would dispute this picture. They are entitled to their view. Certainly there are some parents who have no children or just one. Little do they realize the pitfalls. Certainly there are parents who do not work terribly hard. Perhaps most of us are relatively inefficient. Certainly there are fathers who have endless hours at the office, or the golf club or the recreation centre. They are the lucky or unlucky few who have hired someone else to do their work or play their role. There is no evidence, as yet, that their children will suffer serious deprivation, however.

In fact, in most of the areas covered in this paper there is lacking the scientific evidence which will support or deny the hypotheses possible with respect to the Canadian family. At the present time the Canadian family, in general, is living quite well. Its food is plentiful and of a high quality. It is well clothed. It is reasonably well housed although there are serious deficiencies in both space and quality as well as price. Its health is excellent. It has endless opportunities to use its leisure time constructively and often without monetary expense. On the other hand the Canadian family is an extremely busy group. Its adults are extremely busy and hard pressed to supply the income essential to maintain its high standard of living. Its children are extremely busy, and not primarily in simple play. Whether it is a happier group than its predecessors and more likely to avoid social breakdown as a group or as individuals within a group cannot be determined at this time. It is sufficient to suggest that the trends and tendencies identified in this analysis seem well-established and likely to continue for some time. The pressures, it must be emphasized, are not entirely or primarily from within the family, but to an increasing degree are external, within the national and international cosmos. In this situation it may not be amiss to make the plea that we should pay increasing attention to the intangibles in our standard of living as they affect Canadian family life and somewhat less attention to the tangible physical essentials of our living standards.

WHAT'S A DEGREE COST?

Any doubts about the need of more scholarships for deserving students should be dispelled by the new and generally higher scale of fees announced by Canadian universities this fall.

A preliminary survey indicates an increase of 25% to 50% across the country, though the three largest, the universities of Montreal, Toronto and British Columbia, with a total enrolment of close to 37,000 this year, are holding to the previous level.

The old days when a student could expect to earn enough in his holidays to cover his college outlay are gone for all but the higher and more enterprising earners. McGill, which is one of the more expensive universities, estimates that the average out-of-town student should figure on $1,250 a year for board, lodging, books and personal expenses, plus fees of $550 for an arts course to $750 for medicine.

That works out at not far short of $10,000 as the total cost of a degree in one of the longer courses. Even at the University of Montreal, where costs are among the lowest, it is estimated that the average student will spend over $1,200 a year or almost $5,000 as the total for the four-year arts course, and $6,000 to $8,500 for the engineering, law and medicine courses.

And these outlays, it should be stressed are only those paid by the student. In every case, there is additional heavy expense borne by provincial and federal governments and by private endowment funds.

—*Financial Post*

Objectives for Management Training

Management training programs, both within and outside individual businesses, have enjoyed considerable vogue in Canada since World War II. Prof. Walter Thompson, founder of one of the first and most successful of these programs, is currently engaged in research into the ingredients of sound training for management. In the following article he discusses some of the objectives of management training.

WALTER A. THOMPSON

The growth in management skill development is one of the most emphatic situations in the post-war era. Few phases of business have so captured our interest as the development of men for management responsibility.

The University of Western Ontario was the second college on this continent to sponsor a management development course for senior managers. This was in 1948. Today there are in the neighbourhood of 50 universities sponsoring similar courses. During the 11 years that Western has run its Management Training Course sessions, a little under 1,000 men have taken the course.

In addition to sending many men to these courses, business firms have spent large sums of money on their own programs. The most dramatic move of this type was made by the General Electric Company when it established its extensive program at Crotonville, New York a few years ago. The Standard Oil Company of New Jersey was an early and effective worker in this field. In Canada, the Canadian National Railways, Aluminum Company and the Bell Telephone Company are among the companies which have undertaken formal courses during the past several years. A great number of other companies have carefully-thought-through but less formal programs designed to develop management skills.

Perhaps some of the interest in this area may be attributed to the relative neglect of activity from 1930 to 1945. It is interesting to note that training in administrative skills *per se* was also neglected by business schools. Wallace B. Donham, late Dean of the Harvard Business School, remarked in the mid 1940s that Harvard had been teaching *what* to do in business, not *how* to do it. Most of the courses, apart from such "skill" courses as statistics and accounting, dealt with *decision-making* skills in particular technical areas such as finance, production, or marketing. Administration (working through and with people) as a separate skill wasn't in the curriculum. A move to correct this was made at Harvard with the addition of the "Administrative Practices" course. A course of this type was not taught at Western until 1948. Many business school course offerings still avoid this area. It may be some scant comfort for business men to know that they have had plenty of company in their neglect of training people for management.

The stagnant '30s and the war years of the early '40s combined to put together 15 years of vacuum so far as many things were concerned. Companies just were not worrying about how they would fill the places in the management team. When the results of this void were combined with the mushrooming growth of points at which management skills were required, it is easy to see why this problem moved up to a prominent place on the agenda of responsible business thinking. When problems get put in front of responsible people, solutions tend to come forward: Industry has many varieties of solutions to this problem of developing management skills in people. With much experience behind us as contrasted with 10 years ago, we can look critically at what we are and have been doing in this important field.

CANDIDATES FOR MANAGEMENT POSITIONS ARE STRONG PEOPLE

As a group, the men who move into the first management group represent the finest possible class of men. Our culture is one where business skills have a high value. The person acting in this area has prestige, dollars, and honours heaped upon him. It is not unnatural that managerial activity should be attracting good minds and personalities. In many ways, the future of our business-minded culture depends upon a careful understanding and wise handling of a magnificent group of men. They are, as a group, men who are "willing to go the extra mile", good family men, active in civic and church affairs, and craftsmen at their jobs.

The most uniformly consistent statement that has appeared on corporation applications on behalf of a man to the Management Training Course has been that he is technically most proficient in his specialty. The applicant is believed by his boss to be a top-flight sales manager, a first-rate figure man, an excellent manufacturing manager, or whatever his specialty may be. This attribute seems to be a uniform requirement before holding down a place on a senior management group. Certainly, this is not wholly unexpected; from childhood, status is given to those who are good at a skill. The man who is tops in his technical area has a good running start for broader management responsibilities. The men who come to Western's Management Course are, by and large, in this group. Companies have always been urged to send the man "who can't be spared" from his job.

A great deal will be said later in this paper about the deficiencies of these men. A further note should thus be made about the kind of people who are being talked about in this paper. They are frequently the top men in the company in their field—sales, engineering, production, industrial relations, or finance. Some are presidents or executive vice-presidents. Most of them are in their early '40s. They come from all over Canada, and represent every conceivable type of job and industry. They are men who are at the top of their technical skills. These strengths add up to a flattering total for the group. The men who are being talked about in this paper represent Canada's best managerial talents.

CATALOGUING OF WEAKNESSES IS USEFUL

The structuring of any program should be tied firmly to real needs. The froth oftentimes keeps one away from the substance for more than a little bit. The urgent need for help in manning industry's management team has, in the opinion of some observers, resulted in rides in a number of diverse directions. A great number of radically-different programs have evolved in the past 15 years. There is a grave possibility that poorly-conceived programs can do and have done permanent damage to individuals. Many "experts" have offered their services; there has been some evidence of high pressure tactics from highly interested parties. Most if not all programs can profit by a healthy second look.

An example of profitable second looks is happening with at least one executive development device. Many are now wondering about the use of any standard approach to executive performance appraisal; some of these schemes would require all management people to become psychologists. An increasingly appreciative audience is listening to such people as Douglass MacGregor of M.I.T., and O. A. Ohmann of the Standard Oil Company of Ohio. Their ideas that performance appraisal should be tied to *the actual functioning of the individual on the job* is certainly gaining a wider audience. Some pretty intelligent people, after a decade of experience, are now saying a company should structure its program to its particular needs and not try to adjust to someone else's program. More of this sort of thinking will continue to emerge. It is logical to expect a reasonable answer to this question: "What will our program teach a man which will make him a better manager?"

A record of past breakdowns is a good starting point in improving the design of any machine. A knowledge of the weaknesses of men scheduled for senior management responsibility is important in designing a management course. Western's Business School has asked for a full rundown of details on applicants to its Management Training Course. Among the documents asked for is an intimate appraisal of the weaknesses and strengths of an applicant, this statement to be completed by the most senior officer of the company. These letters have enabled a better structuring of the course based on a running knowledge of the needs of specific senior management prospects. Some letters are written pretty casually; the great bulk indicate some insight into the individuals attending the course.

It has occurred to us that a systematic examination of these weaknesses as seen by "the big boss" could serve a useful purpose to others. There are not many places where this kind of information is available. The bulk of this paper will deal with an analysis of about 100 randomly-selected letters received in connection with applications to the Management Training Course. The strengths of the men as reported by bosses are only briefly referred to. More work will be done and may be reported

on at a later date. The actual wording is quoted in most cases. It is felt, too, that a full reporting of the descriptive clause will serve to give impact and proper colouring to what we are trying to convey. Let us take a look then, at the bosses' ideas of the weaknesses of the best senior managers and their implications for action. Categorizing and classifying the comments yields the following kind of breakdown.

Poor manner of dealing with people in doing the management job ("abrupt", "not careful listener", "fraternalistic", etc.)	32
Personal quality	
Lacks self confidence	19
Oversure—Over-aggressive	9
Limited Knowledge of Functional Fields	57
Personal Qualities—needs social "rounding out"	8
General need of seasoning—experience ("see how others handle job", "needs experience", etc.)	24
Actual manner of doing job	
Poor at Delegation	3
Operational Problems ("not good at verbal skills, "weak planner", "poor at deadlines", etc.)	15
Decision Skills weak	30
	197

IMPLICATION FOR TRAINING APPROACHES

What are the implications of this to a company wanting to maximize growth of its executives? More immediately important to the persons responsible for programs, how should this information be recognized?

There are some important implications of all this for course or program content and methods. Professor Ross Walker, who has had long experience with men in the advanced management programs at Harvard and Western, has described the job to be done in these courses as "an assist in changing gears". The problem of assisting men to qualify for the first management team is a formidable one. Our analysis would suggest that some of the following things should be done:

- the man should be helped to have a "feel" for the functional areas so that "whole" situations will be considered.
- help should be given in decision-making skills. This can only be done by heavy and laborious practice.
- an assist in the day-to-day operational problems should be given.
- every effort must be made to help to develop a "mature" man.
- greater "dealing with people" skills should be stressed.
- the course should provide a maximum opportunity to have personal contact with good management.
- it should also yield an opportunity to see how men at senior management levels think and feel about their jobs and problems.
- the man should get a good look at himself. The under-confident man should be helped and the over-confident man should be brought in line.
- his training should give a good opportunity to have intimate contact with problems in many industries and different parts of the country.
- he should be helped to develop a thorough desire for excellence in a management skill.

In all this there has been little talk of need for *technical* help. This is an area where the individual can do much for himself. The single operator working by himself finds it much more difficult to acquire *management* skills. A man can use outside help in improving this phase of his skills.

The many-times-mentioned deficiencies are remedied best by the right kind of experience. The ideal situation is to have this happen on the job. Job-rotating programs are being of real help in this connection; no course outside the company can be a substitute for this approach. Management development courses both inside and without companies have their place in dealing with management weaknesses.

ENCOURAGING A REAL DESIRE TO BE A GOOD MANAGER

A most important function to be performed in any executive development program is to encourage a desire on the part of the individual to grow. A man must perform a large part of the job of development himself. Courses do their work best when they open the door to management skills just a crack and give the man a brief peek. The joy of discovery of the skills should be left to the man. The route to management competence is a varied one, and depends so much on the background and proficiencies of the man. He must find it himself.

A most essential ingredient in growth, either in a functional skill or in managerial competence, is a desire by the individual to grow. There is ample evidence to validate this point. Abraham Lincoln is supposed to have been asked by a young man the best

way to become a good lawyer. Lincoln asked: "Do you *want* to be a good lawyer?" When the reply came back in the affirmative, the young man was told, "You are half trained already". Some place in the training program we must make sure that desire to improve managerial skills is developed to the maximum. This can be done—the whole atmosphere of management courses should exude the desirability of this ambition. The mere concentration of large numbers of people with this characteristic in conjunction with good teachers should intensify this characteristic in all the participants.

THE DEVELOPMENT OF INTEGRATED THINKING

Lack of experience in all or a number of areas of business was the most commonly mentioned limiting factor to proper management skill. An outstanding leader in the steel industry has said "there is no such thing as the steel business; from the viewpoint of the man in the industry it is a series of pigeonholes and he fills one of them". It is very hard to transfer people across functional lines. The better man isn't likely to be encouraged to move away from a job that he is doing superbly well. But the head of a functional specialty simply has to know a lot about the other man's specialty. Along with this is the uncomfortable fact that knowledge of the specialty itself is becoming more and more demanding. A similar dilemma is faced in educating young men for medicine today. To master all fields of knowledge in modern medicine would result in perpetual attendance at Medical School. The best that can be done is to get the man to think like a good medical man. An able man who really has this skill will be a good doctor. Business will have to follow along similar lines. Our accountant must be put in situations where he must, to solve problems, think like a sales manager, like a production man, and so on. Other specialists will have to be given the same treatment. Teaching methods to do this job must be devised.

An interesting development of the tendency of the functional specialist to think in terms of his specialty was reported by one of Canada's outstanding corporation presidents. He said that these functional specialists all wanted to take over his job. He meant that the sales manager, the production manager and the secretary each wanted the business run with their ideas prevailing. A highly skilled, successful and vigorous man can push his particular skills and point of view too hard for the good of the whole. Senior management men must work in an atmosphere where they have an understanding of the "whole" situation.

A NEED FOR MATURING EXPERIENCE

A program which will lead to encouraging a more mature person is clearly indicated. The company—in many cases—has done much to provide for this. The most satisfying experience available to a man is to work for a mature executive.[1] Exposure of the neophyte manager to good management is the best possible background for the development of proper management skills. Much has quite properly been said about the administration unit constituting a vigorous social unit. The knowledge and skills of the competent social scientist can be most useful to us in our search for methods of development of good management materials. Anything that contributes to a healthy "management atmosphere" is going to accelerate the breeding of good managers. This involves, among other things, the right rewards going to the right people for the right reasons. It means that men with senior managerial jobs act as responsible people, with a knowledge that they are the image to the growing executive of what a good manager is and how he acts.

This important phase of management development is realized by many senior men. One has expressed it in these terms: "I should be taking this course before any of my men take it." Another has spoken of the great difficulty that his successor will have in filling his shoes. This particular man, quite properly, is conscious of the unique position he holds. He happened to have built a vastly successful business from what was a shambles. He has vast prestige with his subordinates which is expressed in vigorous support of company policies. His successor will not have the advantage of this loyalty. The successor will have to be a different kind of manager. The man succeeding him must possess characteristics which will enable him to play his role in a different way. The successor will not be able to succeed by copying the man who had made a success of the business.

It is interesting to note that little was said in cataloguing weaknesses about the need to learn the *mechanics* of administrative work. There was very little said about a man's lack of knowledge of how to set up a proper organization chart. There is a growing body of knowledge regarding the devices that are helpful to senior managers. But it should be realized that many of our best administrators have been simply too busy to do the introspection that would lead to good writing regarding their skill. One observer has said that a baseball pitcher knows a great deal more than a typical executive about why he is effective. Much of the material dealing directly with the mechanics of administration is good.[2] Most good

[1]Hugh S. Sutherland, Executive Vice-President of Shawinigan Chemicals Ltd. and graduate of Western's 1949 M.T.C. class, made the final address to the M.T.C. class of 1956. He noted that many bosses have dead horses (*really* bad management practices) and that *the bosses' dead horses breed.*

[2]An outstanding recent example is a speech at the 1957 UWO Business Conference by Prof. F. E. Folts of the Harvard Business School on "Assessing Our Management Philosophy". This was published by the UWO Business School this year in the Proceedings of that Conference.

managers have read these excellent materials. Top management has a right to expect that the evolving manager will take advantage of this growing body of literature and thinking. Many have exposed themselves to knowledge with little effect upon their behaviour. One must conclude from the list of weaknesses of the men that *a behaviour change and not knowledge is being asked for by their bosses.*

SOME IMPLICATION REGARDING TEACHING METHOD

Teaching has never been a simple matter. What is more disturbing is that we are severely handicapped as managers[3] unless we know something of teaching. Dr. Herbert Smith, the first Canadian-born president of Canadian General Electric, has expressed a view of managing that is in line with this idea.[4] He would reverse the usual organization chart. He would put the customer at the top of the organization chart and the dealer or salesman second. Everyone below this level would be listed as helpers to the levels above. The president would be at the bottom and would have the greatest number of people to help. Chester Barnard, one of our most profound thinkers in management, has a little of this idea when he suggests the firm's customers should really be included in the company organization chart. Everyone who gets things done through people must take on the responsibility of enhancing the skills of the subordinate.

What does all this imply when we start to think of encouraging the kind of growth that will correct the weaknesses catalogued in this paper? It seems clear that it will be necessary to use approaches and devices quite different from those that are successful in making a man a good industrial engineer, a good salesman or an expert in the usual traditional skills. We are asking for an end result that is fabulously difficult—a responsible, mature, wise manager. It is clear that this cannot be done overnight. The whole process is delicate and subject to most careful handling. We at Western have gone almost wholly to the "case method" of teaching, in the belief that this is the most effective method of accelerating experience. The sponsors of our Management Training Course are really telling us that they want their men to have the right kind of experience under the right kind of conditions. Western has tried many devices, and the use of this method seems more clearly indicated with each succeeding group.

The case method, properly used, has many subtleties that are not seen at first glance. Some believe that its chief value is to know how to handle a particular kind of situation. This may be very true. Business situations have a way of seldom repeating themselves in every detail. The values to the class members come in many ways. Some learn that there are many, many good answers to the commonest problems (it should be much easier to delegate). Others learn that their ideas are pretty poor (overconfidence is punctured), while some see that they can hold their own against very fast company (confidence is built up). Some find that simple (to them) situations get pretty complicated when good minds really go to work (they become more contemplative). Some accountants are forced to be a sales manager to tackle a problem. And so on.

A word should be said, too, about the kind of teacher. The men exposing themselves to management courses are our most talented people. They deserve the best teachers. These teachers must be wise, know their functional area and must be highly skilled in the art of teaching. Liu[5] tells a story to illustrate the use of the indirect method of teaching as used by a good Chinese teacher. The story is an old one and involves a boy who wanted his father to teach him his trade. The father was a skillful burglar. The boy was taken on the next burglary job performed on the wealthiest Chinese gentleman in the area. The pair after some time reached the treasure room. The large box containing the valuables was opened and the son was told to get in the box. As soon as this was done, the father clamped the lid down, locked it and left the house. In the process, he made enough noise to wake the household. After the excitement had died down, the frightened boy wondered how he would get out. He solved this by making a noise like a mouse. When the box was finally opened in search of the mouse, he ran off into the dark with the householder in hot pursuit. Remembering a well along the way, he threw in a large stone. His pursuer, thinking that he had fallen into the well, allowed him to make good his escape. Arriving home, the boy angrily asked his dad to explain his strange behaviour. The father replied, "How did you escape from the house?" The son recounted his story. The father then said, "You have just had your first lesson in burglary". The indirect method of teaching is painful but effective. However, it is worth considerable pain. Successfully used, it can do the most elusive of teaching jobs—develop an adult sense of feel for Good Management Action.

(Further articles, based on Prof. Thompson's research in this field, are scheduled for future issues of The Quarterly.)

[3]Prof. Folts has defined a manager as a person who makes his contribution to the business enterprise through the work of other people.

[4]This idea was suggested half-seriously to me in a conversation regarding management development on October 30th, 1958.

[5]Liu, *Tao of Science,* M.I.T. Press 1958.

APPENDIX

Categorizing the responses to the personal evaluation question on the M.T.C. application form was a difficult and time-consuming job. Nevertheless an examination of these responses can yield fruitful results for anyone who wishes to spend the time with them. Listed below are many of these responses, under the appropriate headings:

Poor Manner of Dealing with People in Doing Management Job.

"Doesn't see difficulties in persuading people to follow 'company' course."

"Disinclined to deal directly with people."

"Not forceful in giving direction—whole manner does not do justice to his position, experience and knowledge."

"Needs some development in leadership qualities."

"Has label of being too ambitious — overlooks human aspect."

"Abrupt."

"Doesn't take time to get thinking of people reporting to him."

"Not a careful listener."

"Needs to be more tolerant."

"Inferiority complex."

"Needs insight into dealing with people."

"Fraternalistic."

"Needs personnel training."

"Needs help on human aspects."

"Poor relations with people at his same level."

"Reserved."

"Reluctant to accept methods or ideas of his staff."

"See technical angles of problems rather than repercussions on people."

"Could use help in the diplomatic area."

"Ability to carry the judgment and esteem of people affected by his work in other areas of the company."

"Does not consider the opinions of others."

"Weak in human relations."

"Further experience in dealing with people is required."

"Needs help in working smoothly without irritating people."

"Is a one-company man and could benefit in case discussions with other men—comparisons will be helpful."

"Is often brusque and does not explain."

"Some difficulties in getting confidence of other people."

"Overly aggressive in pressing own points."

"Thinks of himself as 'one of the boys'."

"Falls short on inter-personal relations—is withdrawn."

"Personal relations could be improved."

Personal Qualities—Self Confidence

"Needs self-confidence."

"Over worries when things are unfavourable."

"Lacks educational background and this may cause some lack of confidence in his own opinions and decisions."

"Inclined to be nervous."

"Needs the self-confidence that comes with intimate association with other management people."

"At times is overly influenced by people."

"Not self confident and doesn't assert himself as he should."

"Needs more self assurance and should reduce his worry and tension."

"Self confidence could be improved—he is too inclined to worry."

"Rubbing shoulders with other management men should lessen his worry on the job."

"Training in management should increase his self assurance."

"Not sufficiently self confident."

"Not confident—shy."

"Needs to be more relaxed when meeting people."

"Needs to relax."

"Ability to work under pressure is impaired."

"Worries a great deal."

"Little unsure of himself—lacks initiative."

Oversure-Aggressive

"May have superiority complex — am sure there is real irritation among his subordinates."

"Inflexibility is real problem."

"Intolerant of people with less than his technical knowledge."

"Short temper and lack of patience."

"Little too opinionated."

"Doesn't take criticism well."

"Immature—oversure of himself."

"A real tendency to be too outspoken — which doesn't bother those really close to him—but does others."

"Takes too definite a stand."

Limited Knowledge of all Functional Fields of Administration

"Broaden education in management."

"Appreciation of broader problems."

"Weak in coordination with the rest of the business."

"Broaden thinking—see integrated picture."

"Broaden outlook."

"Needs insight into problems have had no experience in."

"Has had no opportunity for broad interests."

"Lacks management experience."

"Needs sales and advertising experience to round out self."

"Needs to know more about general business."

"Excellent technical background but now needs figure knowledge skills and general corporate structure."

"Narrow technical background and now needs broad management knowledge."

"Needs insight into business administration as a whole."

"No selling experience."

"Lacks sales experience."

"Needs broad outlook."

"Lacks broad experience—has little academic or experience in other industries."

"Has specialized in accounting and financial aspects and needs broadening."

"Needs the influence of varying opinions."

"Requires a broader knowledge apart from his specialty."

"Needs commercial and financial knowledge."

"General management broadening."

"Broaden his general management skills."

"Needs more varied contacts and see organization problems of others."

"Experience solely in manufacturing."

"Needs to broaden outlook to include sales, production, purchasing and personnel."

"Training has been narrow."

"Lacks broad concept of managerial functions—to include overall outlook of the company."

"Narrow experience on the job and industry-wise."

"Could use experience in broader fields."

"Is new to country and intimate contact with the cross section of business men will be most helpful."

"On the way to broader responsibilities—present job heavy but narrow."

"Lack of experience has left him weak on financial aspects of his problem."

"Is and has been moving up fast—needs to know whole picture."

"Needs broader viewpoint—particularly sales."

"Needs broader and overall point of view."

"Has narrow business base."

"Weak financial aspects."

"Needs financial background."

"Requires rounding out in sales, personnel, management training."

"Broader general knowledge."

"Needs more background to handle labor."

"Too little appreciation of activities of other divisions."

"Cases should broaden him."

"Want to broaden him."

"Limited experience—could use contacts with other functional areas and geographical areas."

"Experience to date has been in limited area."

"Has sales experience only—is inclined to be quite hostile to figures."

"Needs broader knowledge of administrative problems in industry generally."

"All his experience is in sales."

"Should broaden knowledge."

"The financial aspects are too important to him."

"Experience is specialized and somewhat limited."

"Needs to know more economics, business administration, sales and industrial relations."

"Has limited technical and financial knowledge."

"All experience in sales—want to broaden him."

"Needs more information in marketing, production and finance."

"Needs broadening."

Personal Qualities—General Social Rounding Out

"Needs maturity."

"Not a good mixer."

"Did not have the benefit of a university education—and is conscious of it."

"Reticent."

"Inherent 'personal qualities' for administration job needs further development."

"Needs social contacts with men in senior executive positions."

"Rapid promotion has had some interesting side effects
—has grown up with other members of the senior management team
—over-awed by influential people."

"Needs broad knowledge of qualities of a capable executive should possess."

Actual manner of doing management job

Poor at delegation

"Tends to do all the work rather than let the staff do their share."

"Doesn't delegate well."

"Delegate more."

"Weak on delegation."

"Does not delegate effectively."

"Holds tight rein—does little delegation."

General Need for Seasoning—Experience

"Needs administrative experience."

"Needs more management experience."

"Needs experience."

"General review and sharpening of management skills."

"Has had limited management and administrative experience."

"Has had little experience as an executive."

"Needs general maturity and executive know-how."

"See how others handle management job."

"Should know more management principles."

"Needs more experience with problems involved in large units—he has worked wholly with small groups."

"Limited administrative experience."

"Needs more training in administrative control and planning."

"Should know more about organization."

"Lacks 'savoir faire' in dealing with his staff."

"Should learn more about the nature of authority, responsibility and delegation."

"Needs to improve his administrative understanding."

"Needs broadening out."

"Needs association with other successful men."

"Lacks experience in top management job."

"Needs to get management principles."

"Weak on administration."

Operational Problems Exist

"Not good at verbal presentation of ideas."

"Weak on planning."

"Weakness in basic education has hurt verbal skills."

"Weak in organization of his time."

"Lacks initiative."

"Be more 'operational' rather than a 'desk manager'."

"Needs to have a more concise manner of presentation of his point of view—to engender confidence and acceptance of his ideas."

"Shows irritation with people who don't have his engineering background."

"Has high intensity in matters and then tends to be too impatient with others."

"Needs help on long-term planning and forecasting."

"May have difficulty in handling older men."

"People dealing with him may not like him."

"Poor at meeting deadlines."

"Does not communicate with other departments."

"Does not work well with other companies."

Decision Skills are Weak

"Reluctant to make a change."

"Enthusiasm gets in the way of sound appraisal."

"At times misses significant details."

"Slow at decision making—is inclined to over-evaluate."

"Should develop greater perception for the obvious."

"Too cautious."

"Overlooks the practical side of problems."

"Has difficulty in recognizing corporate problems on a broad basis."

"Needs point of view of overall management."

"Finds it difficult to let go of details so he can look into broader questions."

"Analyzes personally too many details."

"Too conservative in trying new approaches."

"Needs wider outlook."

"Tends to make snap judgments."

"Some times gets emotionally involved in his decisions."

"Inclined to make snap decisions without looking through to logical conclusions."

"Weak in imagination."

"Quick decisions without the facts."

"Speaks too quickly."

"He should be looking at 'total situation' and recognizing some of the 'grays'."

"Reluctant to change."

"Has erred in calculating economic return on investment."

"Tends to go into too much detail—goes into side issues to much—which unbalances his time allocation."

"Makes decisions too quickly—needs to be more contemplative."

"Lacks flexibility—ability to understand rationale behind divergent points of view."

"Indecisive."

"Greater patience and steadfastness in pursuing long term objectives."

"Needs experience in analyzing tougher problems."

"Needs contemplative approach—and perspective."

"Youth and rapid advancement is not a handicap in approaching a problem."

Science and Society

In this article Dr. Nicholls discusses some of the critical and often overlooked aspects of the impact of modern science upon society. The very serious lack of understanding by society in general of what science is and does, and of its relation to technology are pointed out. Some of the more serious social implications of this situation are described and an outline is given of the structure, growth and methods of the sciences.

R. W. NICHOLLS

The inclusion in this journal of an article on science in its broadest sense and on its complicated interactions with modern society may puzzle some readers and cause others to turn rapidly to articles of more apparent importance and timeliness in the business world. It is because of such an instinctive reaction, which is symptomatic of the outlook of society toward science, that the article is here.

Science has a tremendous, and often completely misunderstood, influence upon our life and civilization, and it is enigmatic that it has been consistently so badly and inaccurately represented to the society which depends upon it and is now its patron. The unfortunate results of this lack of clear understanding of what science is, and what scientists do, are often apathy, fear and distrust.

On the one hand the organs of mass communication, by their continual emphasis of the bizarre, the unusual and the different (in an effort to sell their product) have misrepresented science to their audience as a mixture of wonder drugs, atom bombs, death-rays, thermo-nuclear power, rocketry and space travel. It is thus technology (or applied science), though tremendously significant in its own right, which has been misrepresented out of context as science to the continual bewilderment of many.

On the other hand the professional scientist is trained to be reticent about his work, and only when sure of it to communicate it (often in the scientific literature) to those of his peers who are competent to understand it. The idea of using promotion, advertising or similar devices of 'social engineering' to popularize his work are instinctively abhorrent to him. Distressing experiences with uninformed and grossly inaccurate science reporting in the press tends to make him wary of trying to interpret his work to the general public for fear of being misunderstood. This is a great pity, as it is only he who can properly inform society of what science is and what its terms of reference are.

Thus a deplorable lack of communication has developed between science on the one hand and society on the other. It is even more deplorable when it is realized that the efficient modern mass communication facilities, which could have so easily interpreted scientific endeavour correctly, have instead conditioned society with completely false ideas of the scope and nature of science.

It is therefore up to the scientist to attempt to improve the situation, and what follows is a small gesture in that direction.

SCIENCE AND THE SCIENTIFIC METHOD

Science and the humanities have often been contrasted to their mutual disadvantage by people

who have little real knowledge of either or both. Fortunately the pendulum of intellectual opinion has now started to swing towards the concept of unity of knowledge in which the humanities encompass the study of man and his aspirations, while science involves the study of his environment. Only those with a limited appreciation for civilization can now claim that all of it is contained solely in the humanities or solely in science.

The phenomenal successes in the research of the past five or six decades has given us a great, though by no means complete, understanding of our environment. The technological application of this research had a profound effect upon our control of environment. So profound has been the change in techniques used to control environment that society seems to have given up the attempt to comprehend the techniques, leaving this to 'the experts'. One of the characteristics of modern society is that unfortunately it is hag-ridden by 'experts' with very few real paths of communication between them.

It is thus vital to clarify the terms of reference and scope of science and of the scientific method.

The sciences may broadly be divided into: The Physical Sciences (Physics, Chemistry, Astronomy, etc.), The Earth Sciences (Geology, Geophysics, etc.), and The Life Sciences (Botany, Zoology, Physiology, etc.). The development of these involves *pure* research, the sole aim of which is to obtain a better understanding of material creation for its own sake, and the sole motivation of the researcher is insatiable curiosity. Each 'pure' science also has its applied aspect (which is part of Technology), which usually has far-reaching industrial and economic applications. We thus recognize Engineering as Applied Physical Science, Mining and Prospecting as Applied Earth Science, and Medicine and Agriculture as Applied Life Science. Technology, and thereby industry and the economics of the world, are thus continually making withdrawals from the Bank of Pure Science, and the account there must be continually bolstered by pure research if technological bankruptcy is not to ensue.

That is not to say that technology is any more or any less important than the pure sciences which support it. Their terms of reference and spheres of activity are entirely different. Technology is concerned with the increase in prosperity through environmental control. Thus the motivations of the technologist are close to those of business and industry. It must never be overlooked however that technology can never be more advanced than the science which supports it. Consequently if technological progress is to be maintained, far greater and less spasmodic long term support will have to be given to pure research.

The development of each of the sciences has in many ways been similar. The development of the physical sciences has been the greatest because of the relatively simple interactions between matter and energy with which they are concerned, compared to the much more complex interaction met with in Geological and Biological phenomena.

The first stage in the development of a science is the collection of observations and their classification into groups in which each member of a group has similar properties to the other members (e.g. Biological Species). In the physical sciences the purely classificational stage has long passed. It was called 'Stamp Collecting' by Lord Rutherford, the father of Nuclear Physics. (He claimed that 'All of Science is Physics or Stamp Collecting!')

In the second stage of development, *measurements* are made upon the response of matter to controlled changes in its environment (e.g. expansion of solids caused by heating, or change of growth rate of plants with mineral content in soils).

This gives rise to the collection of vast amounts of data and brings us to the third stage, namely an attempt to *explain* the measured dependence between cause and effect. It is here that science calls for all the imagination which its practitioners can muster. The standard approach to the third stage of the scientific method is to think in terms of models. For example, the billiard ball model or picture of atoms is entirely adequate to represent most aspects of the physics of gases. The predicted behaviour of the model (which can be compactly described in most cases by the language of mathematics) is compared with the experimentally measured effects. The predicted behaviour of the model is called a *theory,* and if agreement between theory and experiment is adequate, the theory is adopted provisionally as a tentative explanation of the observed and measured phenomenon.

A great economy in thought is obtained through the use of a theory. It predicts all of the measured data which can be collected from many similar experiments, each under slightly different conditions. When a new experiment is performed which does not agree with the theory, the model is either modified or scrapped in favour of a more successful one.

The continual interplay between theory and experiment is the mainspring of the development of the modern sciences and is common to all of them. It should therefore be emphasized that the connotation in every-day speech of the word 'theory' as meaning something essentially untried and imprac-

tical is a most unfortunate piece of semantics. Without the close interplay between inspired theory and careful experiment, modern science would never have been developed.

The scientific method as outlined in part above is thus merely a reasonable form *of objectively organized common sense.* There is nothing magical or mystical about it, and it is widely employed in other fields (e.g. History). Another important aspect of science is that the only ultimate authority which it recognizes is appeal to experiment or observation. It is free therefore from the authoritarian dogma which pervades much of the rest of human endeavour.

The motives which drive men to practise science are probably as complex as those which send them into other endeavours. Those who are eminently successful in science seem to have a common possession of an unrelenting curiosity about most aspects of material creation, an unusually imaginative and individual approach to problems, and a tremendous ability to work single-mindedly and hard.

SOCIETY

The greatest impact made by science upon the day-to-day life of society is of course through technology. It is thus an understandable, though unfortunate, circumstance that society thinks of technology as science and views it in terms of washing machines, drugs, motor cars, television sets and weapons of war. This is a great communication barrier which has to be broken. The axiom of the dependence of technology upon the science which supports it has to be established in the communal mind. Society, as the user of technology and as the patron of science must give more than lip service to the need for much increased and continued support of the long-term researches in all aspects of science for its own sake, if our economy is to be adequately supported technologically.

One of the most tragic manifestations of the lack of appreciation of society for science (which admittedly is partly the fault of the scientist) is a sense of apathy and almost studied disinterest to science shown by many. Their attitude seems to be, 'It's too complicated for me, let the experts worry about it'. Such an attitude is even more worrying when publicly expressed by our political leaders. It was, for example, disturbing to read in a recent Maclean's interview with the Prime Minister prior to the last general election that: "Science was my bugbear, science will always be my bugbear', and to read a milder expression of the same sentiment in the same article by the leader of the opposition.

None of us can afford the luxury of the inaccurate, dangerous and outmoded view that society is made up of (a) an unreliable and strange minority of technical people with whom we have to put up in order to have the amenities of civilization, and (b) the rest of us. Society is made up of all of us, and none can escape from the responsibility of membership. For example, physicists and chemists have discovered, through pure research, the basic facts of nuclear fission and fusion. Technologists are now able, upon the orders of society, to use this information to build bombs or power plants. (Most of the potential of science for good is balanced by an equal potential for bad; society has to choose which.) We are all equally responsible, as members of society, for the quality of political (and thus presumably expedient) decision which is made upon the use of such technological potential. We may note in passing a current desire for bombs *and* power plants (guns and butter). Should thermonuclear war break out, we shall all be equally responsible for our failure to control our social environment and to learn how to live unselfishly together.

Part of the temptation to set scientists apart as a strange and unreliable minority arises of course from the strong trend of anti-intellectualism which exists in North America. The 'anti-egghead' outlook is expressed as a judgment by the often mediocre upon thought and those who think (of which science and scientists are respectively part). It has been with us for some time, and its apologists appear to be a self-confessed cult of 'doers' or 'practical men' who use outmoded arguments of misunderstood democracy to justify their views and actions. Hilda Neatby in *So Little for the Mind* and Whyte in *The Organization Man* authoritatively discuss the anti-intellectual phenomenon which is a force to be taken into serious account in the interpretation of science to society.

SCIENTISTS

Scientists occupy a singularly significant place in the society of which they are part and which lives by the technology which their work has made possible. The most natural working environment for the scientist is, of course, the laboratory, library or study. In these, his objective criteria of action are clearly defined. He is unfortunately sometimes grossly misunderstood in the wider circle of 'The Establishment' of his organization because he uses the same objective criteria in his administrative dealings with colleagues in the organization outside the laboratory. It may therefore be of some value in the interest of better understanding to elaborate upon some of the commonly-held attitudes of scien-

tists in their dealings with their social environment. I wish neither to defend nor to criticize these attitudes but to bring them to light. It is of course dangerous to make general statements about groups of people without clear statistical justification, and readers are sure to be able to find exceptions to what is discussed below.

The terms 'non-conformist' or 'rebel' have often been attached to the scientist in an organization because of his apparently disturbing influence in questioning organizational dogma as critically as he would a new scientific hypothesis. An honest man cannot easily adopt the split personality of being a clear-minded scientist in the laboratory, and the expedient company politician out of it. He has been professionally trained *not* to accept authoritarian statements without sound experimental justification, and it is sometimes hard for him not to carry this attitude over into his social contacts in the organization.

If Professor J. Doe, F.R.S., claimed authoritatively in print that the moon were made of green cheese neither his professorial chair, his eminence as a Fellow of The Royal Society, his Rolls-Bentley nor his suave and urbane manner would protect him from a swift and somewhat derisive public correction by his peers, and his juniors, of his demonstrable error.

Really effective scientists have also been trained to take the broad view of their work, distinguishing between the important and the trivial. Often there is disagreement with their view of the trivial outside the laboratory which causes misunderstanding. Because they are scientists they usually abhor the status quo in science and often out of it, and thus to question procedures in the organization for which they work.

One fact which may come as a surprise to those who think of all their staff as "company men" by definition is that though the standards of personal honesty and integrity of individual scientists are the very highest, in order to be an effective member of the modern scientific community, and therefore the most useful to their organization, they have to consider themselves as scientists first and company men second. This outlook is well documented in for example *The Organization Man, The Academic Marketplace* and elsewhere. It may appear foreign to management, but has to be accepted as a fact of life by those who employ scientists. Science is an intensely personal and imaginative profession demanding all of a man's interest. If he is to be any good at it he cannot afford a dichotomy of outlook. That is not to say, of course, that most scientists are non-conformists as a matter of course or for the sake of adopting a pose (although every profession has its lunatic fringe). They have been trained to ask "how?" and sometimes "why?" and the best of them do so in all aspects of their life. It is perhaps for these reasons that many scientists gravitate to the universities, where they find a traditionally sympathetic atmosphere of free enquiry in which to work.

Finally, it may come as a surprise to some readers who are not used to thinking of scientists and engineers as different to learn that there is often quite a marked difference of outlook between them. This has been skillfully portrayed by Sir Charles Snow in his thought-provoking novel *The New Men.* (His earlier novel *The Search* is an accurate commentary upon the motivations of young scientists). Engineers have been trained to use technology to supply the needs and the whims of society. They adopt a far more pragmatic approach to life than scientists, and supply society's needs unquestioningly. They tend far less to question the rules, either in their handbooks or of the organization which employs them, than scientists. Their job is to build to order, using existing technology, while the job of the scientist is to provide the basic information upon which that technology depends, which requires a far freer working atmosphere. It is not surprising therefore that engineers tend to be far more often 'Company Men' than scientists, and tend far more unquestioningly and consciously to conform to the required behaviour patterns, even in the trivial matter of dress, for example, than scientists.

In technical society therefore one often finds the pure scientists in one camp and the engineers in another which is often conceptually closer to that of management. Some interesting comments are made on the management aspects of scientific and engineering endeavours in the published account (by H.M. Stationery Office) of an international symposium held in 1957 at the National Physical Laboratory, by Teddington on *The Direction of Research Establishments.*

From many points of view the intrinsic differences in outlook between non-technical society and the sections of technical society are bad, particularly insofar as they produce misunderstandings. However the differences in outlook are fundamental to the occupations of administration, engineering and science, and their early recognition and understanding by all concerned should encourage a mutually respecting and understanding outlook.

CONCLUSION

A number of general conclusions can be drawn from the above discussion:

(1) There is a desperate need for a far greater understanding of the terms of reference of science and technology by society.

(2) Scientists and engineers, with the active help of the mass media, should come more often out of their professional ivory towers and interpret themselves and their work to society in everyday terms.

(3) Society must realize that its economy depends upon the healthy state of technology, which in its turn depends upon pure science. It must therefore give long-term support to research in pure science, and in technology, in every way possible.

(4) Scientists, Engineers, Humanists and Society must work to create an atmosphere of unity of knowledge in which no man can call himself educated without a real appreciation of science, technology and humanism.

(5) The powerful international force of science should be recognized. It is one of the few areas of human endeavour in which a man's work, irrespective of his country, race or economic status, is respected on its own merits and for which he receives unqualified recognition. International science is well organized by a set of International Scientific Unions which are a real force for sincere international communication, uncomplicated by propaganda. International science is thus a significant force for peace and mutual understanding in the world.

WHEN TO LISTEN TO THE SCIENTIST?

The nature of the training of the scientist tends rather to disable than to equip him for the conduct of affairs. Conversely, education in (or about) science is not commonly a feature of a business man's background. What is surprising, in the circumstances, is not industry's neglect of scientific opportunities (of which scientists are always complaining) but the use they have made of them. Of course, much science could be much more efficiently used if scientists had more knowledge of business and business men had more knowledge of science.

The problem of all business concerns, whether they are based on scientific innovations like atomics, electronics, plastics or fine chemicals, or whether they are traditional industries aiming at modernizing themselves by new scientific techniques, is to know when—and when not—to listen to the scientist. The expert, in the forward listening post of an advancing front, is aware when there is something new and something better in the offing. While the production manager is trying to organize his assembly line and the sales manager is clamouring for the product, the scientist wants to complete his new experiments and carry them to the pilot stage. He is thinking of Mark IV when the engineers will be prepared to settle for Mark II. This is where business judgment comes in: will the firm go ahead on what it knows or wait for the improvements, suspecting, all the time, that a competitor may be working, at least, on Mark III?

This "freezing" of a process or a product is, therefore, a case in which the scientist is a hostile witness and on which the judge and jury—the board of directors—have to take the decision. The more research there is going on; the more ingenious the scientists; and the more efficient their work, the more embarrassing this decision becomes. As Mr. Owen Young, speaking at the fiftieth anniversary meeting of the General Electric Company of America said, "Broadly speaking, there has not been a time during the past 50 years that anything manufactured by the General Electric Company, was not, to some extent, obsolete by the time it was put in service".

—Ritchie Calder, *Optima*, September 1958

Part One: Perspective

Canadian - U.S. Economic Relations

The vital subject of the economic relationships of ourselves and the U.S. is complex and often misunderstood. In the following paper, the first of two articles, Dr. Reuber attempts to sketch in the background and the history of these relationships. His second article, dealing with current issues in this field, will appear in the Spring issue.

G. L. Reuber

Canada's relations with the United States were once rather aptly described by John W. Dafoe, famous editor of the Winnipeg *Free Press*, as "peace with friction". The amount of this friction and the heat generated has waxed and waned over the years in response to a variety of political, psychological and economic influences. Some of these have been deeply rooted in the history, traditions and aspirations of the two countries, in their social and economic structures, and in their institutions. Others have been of a more ephemeral nature, reflecting fashions of thought and emotion as well as deliberate attempts in both countries on occasion to exploit a somewhat sensitive relationship for limited objectives.

In examining Canada's economic relations with the United States, one would be committing a fundamental error if sight were lost of the broader context within which relations are established. At the same time, failure to comprehend adequately the economic aspects of Canada's relations with the United States has sometimes given rise to confusion. Accordingly, the objective of this discussion is to consider Canada's relations with the United States mainly in terms of the economic welfare of Canadians as a group. For want of a better statistical criterion, one can think of changes in real income per head of the population as very roughly reflecting changes in this economic welfare.

The subject of economic relations has, of course, many facets; but here there is space to consider briefly only two: commodity trade, and investment.

BASIC PRINCIPLES OF FOREIGN TRADE AND INVESTMENT

The case for foreign trade and investment is precisely the same as the case for domestic trade and investment. In both instances the objective is to increase the real income of the community. This objective is achieved by domestic and foreign trade alike in three ways:

1. Trade makes it possible to cater to differences in consumer tastes more fully with any given quantity of goods;

2. Given differences in endowments of the factors of production, trade greatly increases output by enabling producers to specialize on the production of those goods in which they have a relative production cost advantage;

3. Trade enlarges the size of the market. This increases productivity by widening the scope for the division of labour and making it possible to reap various economies of scale. Moreover, because of a larger market the volume of resources which the community can put to economic use is also appreciably increased.

Thus trade makes it possible not only to use resources already employed to greater advantage but

The second part of this paper, discussing three major issues in Canada-U.S. economic relations at present, will be published in the next issue of the "Quarterly". In writing the paper extensive use has been made of the following publications:

I. Brecher, S. S. Reisman, *Canada-United States Economic Relations;* D.B.S., *The Canadian Balance of International Payments 1957;* Bank of Canada, *Statistical Summary,* (Financial Supp. 1957).

also to use resources that otherwise would lie idle; and increasing trade yielding benefits in the three directions mentioned becomes a basic condition of economic growth and prosperity.

Although implicit in these remarks, it needs to be emphasized that trade requires exchange. That is to say, buyers pay for their purchases with what they can sell now or in the future. Consequently, restrictions on purchases mean either a reduction in sales or, alternatively, credit and gifts. Moreover, since trade is multilateral in nature, each trader can maximize his gains from trade by selling in the most profitable market and buying wherever particular wants are satisfied most cheaply.

Investment, be it domestic or foreign, increases the income of the community by making it possible to use capital goods which increase productivity greatly. To acquire capital the community can either rely on its own resources or on borrowings from abroad. Under conditions of full employment the former possibility implies an immediate reduction in the community's consumption by the full amount of the investment and retention of subsequent earnings. The latter possibility means that the current level of domestic consumption can be maintained, but that a portion of the increase in the community's future earnings must be set aside to amortize the investment and to meet future interest and divided payments. The cost of foreign investment to the community, in this simplified world, is therefore the cost of interest and dividend payments to non-residents. This cost comprises four elements: administrative expense abroad; the cost of obtaining captal immediately without postponing consumption—i.e. the price of time; the cost of foreign risk-bearing, entrepreneurship and technology; and any monopoly profits arising out of the investment. An additional cost to the community arises if the side-benefits of foreign investment (e.g. the development of domestic executive talent and technology) are less than those which can be gained through domestic investment. From the standpoint of the borrowing country, foreign investment will be in the community's economic interest as long as the sum of its benefits exceeds the sum of its costs.

Foreign trade and investment are, of course, closely interrelated. To import capital a country must be willing to import goods and services, and these imports must exceed exports by the amount of the investment. To repay capital and pay for its cost a country must export goods and services. Obviously, therefore, a country's ability to attract foreign capital will depend partly on its export prospects and its general economic health. It will also depend, among other things, on the country's political stability, its attitudes toward foreign investment, and the return which can be earned on the investment relative to returns obtainable elsewhere. The benefits to the borrowing country of attracting capital from abroad will consist of the higher productivity and the widening of the resource base of the community made possible through more heavily capital-using methods of production and the import of foreign risk-taking, entrepreneurship and technology which usually accompanies foreign investment. Full realization of these benefits depends largely on trading prospects at home and abroad. At the same time, trading possibilities may be missed if foreign capital, risk-taking, entrepreneurship and technology are not available to develop the resources of the country and fit them to international and domestic demands.

In both domestic and international affairs there are natural conflicts of interest between buyers and sellers and lenders and borrowers. In this classical theory of markets these conflicts are resolved impersonally in a market made up of traders and investors willing to accept the dictates of the market place. As this acceptance breaks down and as these conflicts are referred to Governments for solution, determination of the level and direction of trade and investment becomes subject, within limits, to arbitrary decisions. Consequently, the problem of international economic relations is one of satisfactorily reconciling conflicting commercial and financial interests within a political framework. The magnitude of this task will vary depending on how much responsibility Governments are willing to assume, on the degree of conflict experienced, and on the bargaining strength which a country can muster on its behalf.

THE PATTERN OF CANADA-U.S. TRADE AND INVESTMENT

The basic importance of these general principles is amply demonstrated by Canada's economic history. To an outstanding degree our economic development and prosperity have depended on foreign markets, foreign capital, foreign technology, foreign risk-taking and enterprise, and foreign supplies of goods. These factors have dominated the scene in each major growth period—1896-1914, 1920-1929, and 1945 to the present; and their absence has been sorely missed in the intervening periods of relative stagnation and depression. The importance of these factors is roughly indicated by the fact that exports and imports have recently amounted to between a fifth and a quarter of Canada's Gross National Product; and net foreign investment, including plowed-back profits and depreciation and depletion allowances, has made up something like a third of total net capital formation in Canada.

In the early days of our history the external factors influencing the Canadian economy were pre-

dominantly British in origin. Gradually, however, there has been a shift in favour of the United States until today Canada's economic ties with the United States are of predominant importance. Over the years Canada's ties with "third areas" have also become somewhat more important, as indicated by Table 1.

The factors accounting for these shifts are many and varied. Among them are the difference in the size and rate of growth of the British and American economies, the impact of two world wars, technological changes, the structure of the North American economy and the fact that Canada is a North American country with most of its population living within 300 miles of the United States border. It should be noted, however, that Canada's increased economic ties with the United States are not unique but reflect a world-wide development which for easily-understandable reasons has proceeded somewhat further and more quickly in Canada than elsewhere.

The commodity structure of Canada's trade with the world and the United States at present is indicated by Tables 2 and 3. On the import side, it will be observed that about 70% of Canadian imports consist of fuels and lubricants, industrial materials and investment goods. Of the remaining 30% comprising consumer good imports, about half is made up of food products, automobiles and parts. If is also apparent that although imports from the United States predominate in all sectors of trade except fuels and lubricants, they are especially im-

TABLE 1

Relative Importance of U.S. Trade and Investment in Canada

(Selected Years, 1900-1955)

	% of Total Imports			% of Total Exports			% of Total Non-Resident Investment		
	U.K.	U.S.	Other	U.K.	U.S.	Other	U.K.	U.S.	Other
1900	26	59	15	57	34	9	85	14	1
1914	21	64	15	50	38	12	72	23	5
1926	16	66	18	36	36	28	44	53	3
1930	16	65	19	27	43	30	36	61	3
1939	15	66	19	36	41	23	36	60	4
1948	11	69	20	22	49	29	22	74	4
1955	9	73	18	18	60	22	17	77	6

TABLE 2

Canadian Imports, 1957

($ millions)

	Total	% of Total	U.S.	U.S. as % of Total
1. Fuels & Lubricants	591	10	259	44
2. Industrial Materials	1,460	26	1,025	70
Metals	353		199	
Textiles, Leather, Furs	480		331	
Chemicals	268		230	
3. Investment Goods	1,837	33	1,560	85
Machinery & Parts (Incl. Elec.)	1,218		1,074	
Transport Equipment	246		209	
Const'n Mtrls, Structural Steel & Pipe	373		278	
4. Consumer Goods	1,640	29	1,089	66
Food, Drink, Tobacco	554		251	
Automobiles & Parts	346		289	
Household Durables	208		151	
5. Other	95	2	65	68
TOTAL	5,623	100	3,999	

TABLE 3

Canadian Exports, 1957

($ millions)

	Total	% of Total	U.S.	U.S. as % of Total
1. Farm & Fish Products	1,012	20	331	33
Wheat & Flour	442		19	
2. Forest Products	1,451	29	1,168	80
Softwood Lumber	266		191	
Wood Pulp	292		235	
Newsprint	715		610	
3. Metals & Minerals	1,612	33	996	62
Iron Ore	152		110	
Primary Iron & Steel	137		45	
Aluminum & Prdts.	230		101	
Copper, Nickel, & Prdts.	417		225	
Lead, Zinc, & Prdts.	95		55	
Crude Petroleum	141		141	
Uranium	128		128	
4. Chemicals & Fertilizer	195	4	78	40
5. Manufactures & Misc. Goods	568	12	295	52
6. Re-exports	95	2	74	78
TOTAL	4,934	100	2,942	

portant in the case of investment goods and industrial materials. Turning to exports, one immediately sees the overwhelming importance of Canada's resource industries, which in 1957 accounted for over 80% of exports. Exports of manufactures and miscellaneous goods made up most of the remaining 20%. Apart from exports of agricultural and chemical products, exports to the United States accounted for over half the exports in each major classification—exports of forest products being especially dependent on the United States market. It might also be noted that over half of Canada's manufacture exports go to the United States. Even the most cursory review of these figures makes abundantly clear how catastrophic for the Canadian standard of living would be any significant impairment of our export and import trade with the world, and especially with the United States.

In recent years Canada's balance of international payments has in large measure been dominated by a heavy inflow of capital investment. By and large this has financed the large deficits incurred on current account trade—i.e. the difference between Canadian imports and exports of goods and services. The economic adjustments underlying this process have been facilitated because of the close connection between Canada's import demand and much of this investment. It bears mention also that much of the concern which is sometimes expressed about Canada's recent current account deficits is misplaced. In large part these deficits have represented the transfer of investment to Canada. Indeed, Canada's balance of payments position has been remarkably strong, as indicated by the strength of the Canadian dollar on the foreign exchange market.

Foreign investment has been fundamental to Canada's economic development, as indicated by Tables 4 and 5. In 1956-7, for example, about one-third of net Canadian investment was financed by foreign capital. This, it should be emphasized, represented *an addition* to Canadian investment and *not* a substitution of foreign for domestic investment. To an ever-increasing extent this foreign investment has been drawn from United States sources, which in 1956 accounted for over three-quarters of non-resident capital invested in Canada.

The emphasis on direct investment in strategic growth sectors is one of the most important characteristics of United States investment in Canada. All foreign investors have shown a preference for direct

investment in industries that they can control over investment in securities, but in the case of the United States the ratio of direct to total investment has risen from 44% in 1926 to 62% in 1956, compared with 14% and 39% for other countries during the same period. This inflow of direct investment has been particularly rich in terms of risk-bearing, enterprise and technology.

The purchase of existing Canadian-owned companies by United States interests has apparently accounted for a relatively small part of the growth of United States direct investment in Canada. In the main it is accounted for by the launching of new activities and the expansion of existing enterprises controlled by Americans. About one-third of United States investment is now lodged in manufacturing and merchandising—particularly in industries concerned with the processing of raw materials and consumer durables production — about one-third in government securities, public utilities and financial institutions, and over one-quarter in petroleum, natural gas and mining and smelting. The greatest increases in United States investment have been in mining, smelting, petroleum extraction and refining.

A major consequence of this concentration of United States investment in some of the most dynamic sectors of the Canadian economy has been that American control over certain portions of Canadian industry has become very widespread, as indicated by Table 6. This control has become especially extensive in some areas of manufacturing (e.g., automobiles, rubber products, non-ferrous metals, and petroleum products) and in mining, smelting and petroleum exploration and development.

Canada's heavy and continuing dependence on the United States economy has meant that the Canadian economy has been very vulnerable to fluctuations in business activity and investor confidence in the United States. Though still considerable, this vulnerability may have decreased somewhat in recent

TABLE 4

Foreign Financing of Total Canadian Investment

(Percentages)

	1926 - 30	1950 - 54	1956 - 57
Net Use of Foreign Resources as:			
% of Gross Capital Formation	n.a.	17	27
% of Net Capital Formation	about 25	19	33
Direct Foreign Financing as:			
% of Gross Capital Formation	n.a.	25	32
% of Net Capital Formation	about 50	32	42

TABLE 5

Long Term United States Investment in Canada

	1956 ($ mm.)	% of Total	% Increase 1945 - 1956
Government Securities	1,871	16	29
Manufacturing	3,600	31	160
Vegetable Prdts.	405	3	104
Wood & Prdts.	940	8	145
Iron & Prdts.	893	8	201
Non-ferrous Metals	701	6	235
Non-metallic Minerals	101	1	110
Chemicals	340	3	174
Petroleum & Natural Gas	2,045	17	1,272
Other Mining & Smelting	1,133	10	305
Public Utilities	996	9	(-9)
Merchandising	505	4	220
Financial Institutions	991	8	248
Other	644	5	235
TOTAL	11,785	100	136

years. This has been explained in such terms as a slight increase in the relative importance of domestic markets and domestic production, an enhanced flow of domestic saving, the importance of producer's equipment and materials in Canadian imports, and post-war acceptance by governments in both countries of responsibility for moderating the business cycle. The fact of outstanding importance for this discussion, however, is that business fluctuations in Canada have not essentially been a product of Canadian-American relations but rather of the play of ordinary market forces.

SOME HISTORICAL FEATURES OF CANADA-U.S. ECONOMIC RELATIONS

The history of Canada's external economic relations during the past century reveals a number of general characteristics. One of these is the continuing dilemma faced by Canadians in having to choose between greater prosperity and greater self-sufficiency. Having an intimate knowledge of American prosperity and deeply appreciating its merits, Canadians have long flirted with the idea of free or freer trade with the United States. On the other hand, for a variety of political and economic reasons Canadians at times have also been attracted by ideas of economic nationalism. Reciprocity with the United States existed from 1854 to 1866; this was succeeded by a National Policy envisaging domestic development behind a protective tariff wall; duties were reduced slightly prior to World War I and during the 'twenties, but were raised again during the depressed 'thirties. Since the late 'thirties tariffs have been progressively reduced.

A second feature of Canada's external relations is that from the beginning they have mainly been carried on with countries that have been vastly larger and more prosperous than Canada. To these countries—first Great Britain, later the United States—relations with Canada have been much less important

TABLE 6

Non-Resident Control of Canadian History

A. Percentage of Book Value of Canadian Companies Controlled by Non-Residents:

	U.S.				Elsewhere, mainly U.K.			
	1926	1939	1948	1955	1926	1939	1948	1955
Manufacturing	30	32	39	47	5	6	4	10
Mining, smelting and petroleum exploration and development	32	38	37	64	6	4	3	2
Railways	3	3	3	2	—	—	—	—
Other Utilities	20	26	24	9	—	—	—	1
Total above plus merchandising and construction	15	19	22	26	2	2	3	4

B. Control over Selected Canadian Industries, 1955:

	Percentage of Capital Employed Controlled in:		
	Canada	U.S.	Elsewhere, mainly U.K.
Petroleum	20	74	6
Mining, smelting, refining	38	60	2
Manufacturing—			
Pulp and paper	46	43	11
Textiles	82	10	8
Chemicals	23	51	26
Transportation equipment	45	18	37
Electrical apparatus	18	68	14
Agricultural machinery	67	33	–
Primary iron and steel	92	8	–
Beverages	86	13	1
Automobiles and parts	4	96	–
Rubber	2	88	10
All other	47	45	8
Sub-total	48	42	10
Total of all above industries	41	51	8

than they have been to Canada. Because of this peripheral status, Canada has been faced with a great imbalance of bargaining power in her external relationships. Moreover, measures adopted by Canada's major trading partner—these measures sometimes being of only marginal importance from the trading partner's standpoint—have frequently had highly disruptive effects on the Canadian economy and have created a quite unequal burden of adjustment. Thus, in the formulation of United States economic policy over the years, Canada's interests have frequently received only perfunctory consideration, even though United States policies often have had important repercussions on Canada (e.g. the Fordney-McCumber and Smoot-Hawley tariffs). In the face of these measures, the Canadian economy has had to adjust as best it could, and there has been practically no opportunity to take effective retaliatory measures which would compensate for the damage done to Canadian interests.

Over the years Canada's bargaining position vis-à-vis the United States has improved. In part, this is due to growing United States dependence on Canadian raw materials, Canada's growing importance as a market (now the largest United States market abroad), defense considerations, the United States' large and growing investment stake in Canada and the prevailing political climate in both countries. In part, also, it is due to deliberate government policy designed to bolster Canada's bargaining power by encouraging multilateral trading and financial arrangements, such as the General Agreement on Tariffs and Trade (GATT) and the International Monetary Fund, and by cultivating the Commonwealth connection. However, some of the advantage gained in these ways has been lost because of the breakdown in the roughly triangular pre-World War II trading arrangements with Britain and the United States. This has resulted in Canada being drawn into a more direct bilateral relationship with the United States. Further, present-day plans for economic integration in Europe and economic development in under-developed countries may have somewhat ominous overtones. Should Western Europe, the United States, the under-developed countries and the Sino-Soviet countries emerge as four dominant economic power blocs in the world, the bargaining position of peripheral areas such as Canada could be endangered.

A third noteworthy aspect of Canada's external relations has been the strength of the economic forces which, broadly speaking, have shaped the pattern of Canadian foreign trade and investment. Given Canada's resource endowment, there have been wide gaps in the comparative advantage of producing many products in Canada rather than in the United States—or elsewhere for that matter. And, unlike the general trend apparent for many industrial products, few of Canada's major exports have been faced over the years with a substantial narrowing of the gap in their comparative economic advantage. This has meant that as between ourselves and the United States there has not been a relatively large volume of trade, "trembling, as it were, on the margin of advantageousness, and liable to be blown to one side or the other of that margin by small changes in the wind of circumstances". Accordingly, much of Canada's trade with the United States has, in the broad sweep of history, been relatively little influenced by marginal policy manoeuvres in either country. This is not to deny, of course, that some trade, especially trade in manufactures, has been highly vulnerable to policy changes; and the amount of trade significantly affected has naturally mounted with the severity of the measures. Moreover, with the emergence of economies which may be more competitive with the Canadian economy (e.g. Soviet Union and some of the now under-developed countries) the future might see some significant narrowing in the gaps of comparative advantage which Canada has enjoyed in the past.

As already stated, natural economic forces have also been the primary determinant of the source, size and composition of foreign investment in Canada. Among these factors have been the state of the business cycle, the availability of markets, the need for raw materials, the development of technology, and the prospects for resource discovery and development. Minor squalls in Canadian-American relations over the years have had relatively little influence. It is, of course, abundantly clear from the history of foreign investment in the world generally that foreign investors tend to be sensitive to changes in the economic and political climate and that a major storm in Canadian-American relations could have devastating results as far as foreign investment in Canada is concerned.

Fourthly, the history of Canada's trade relations with the United States suggests that general prosperity in both countries has gone hand in hand with improved economic relations. As maladjustments have appeared in the past, the temptation has arisen in each country to pass on to its trading partners some of the burden through various "beggar-my-neighbour" policies. It is accordingly of the greatest importance that general economic policy in both countries, and especially in the United States, be effective in maintaining economic prosperity.

Finally, during the past century Canadian-American economic relations have been a continuing issue and they probably always will be. It is futile and quite unrealistic to expect once-for-all panaceas in this general area.

Inventory Control and Canadian Wholesaling

Inventory control is sometimes regarded in a narrow sense as a rather specific and mechanical management device. In the author's opinion, however, it can represent a much broader approach to management, particularly in the field of wholesaling, which he uses as an example.

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THE control of inventory is vitally important to every wholesaler. In spite of ready acceptance of this statement by all concerned there appear to be good reasons for careful reference to the subject at this time. Justification comes in these forms: the present upheaval in marketing practices and institutions, the energetic adoption of more efficient business methods by many of the wholesaler's direct and indirect competitors, and the seeming indifference of some wholesalers to the present course of events.

Wholesaling is a fundamental activity in business. The widest meaning of the word includes all transfers of merchandise other than those which involve the ultimate consumer. Wholesaling activities are carried on not only by wholesalers but also by manufacturers and by producers and processors of primary materials. Wholesaling embraces the operations of the great variety of middlemen who have a part in the distributive process. Large retailers assume much of the wholesaling function too.

Wholesaling is as old as civilization, but present-day large-scale operations, and most current institutions, were established only during the 19th century. During the last hundred years many changes have taken place in the relationships between the many participants and in the importance of their roles. Undoubtedly the pattern will continue to alter and responsibility will move from one group to another.

There are three important classes of wholesalers: the wholesale merchant known also as the "old-type" "regular" "full function" or "full line" wholesale, the "limited function" or "specialty" wholesaler and the co-operative wholesaler who is in association with a voluntary chain. These three classes compete vigorously among themselves as well as with the others who are engaged in wholesaling in this country.

The wholesaler in Canada has always faced competition from those in his own line of trade. He has also had to deal with the attempts of other business men to extend the range of their operations at his expense. In recent years many very powerful new influences have been felt and competition today is keener than ever before. In order to retain his share of the rapidly-increasing volume of business in this country, the wholesaler must make strenuous efforts to keep abreast of changing circumstances.

The new conditions which affect him include: modified consumer shopping habits, aggressive merchandising, the advent of the shopping centre and reduced importance of the isolated retail store, extensive chain store operations carrying wide varieties of merchandise purchased at low cost, direct group buying by retailers, varied efforts of manufacturers to by-pass the wholesaler, and the adoption of modern efficient business practices by many competitors. The last of these is of particular importance in this paper but the others must receive attention too because each is related to inventory control.

THE IMPORTANCE OF INVENTORY

Merchandise is the centre around which all activity is focused in every wholesale organization.

The basic purpose of the wholesaler is to acquire commodities in bulk and to distribute them to customers in smaller quantities, thereby performing a necessary and valuable service.

Every aspect of the creation, operation and dissolution of a wholesale business is related to inventory. In the beginning, the warehouse location, layout and facilities will be determined by the types of merchandise to be handled. Operating responsibilities are linked inevitably to the buying, receiving, warehousing, pricing, selling and shipping of goods. In the event of the closing or transfer of ownership of a wholesale business the most important and difficult task is the valuation and disposition of inventory.

The subject of inventory control can be approached in two ways. The first and more limited view involves reference to basic business objectives, to the direct methods used to record and safeguard merchandise and to primary assessments of the success or failure of the enterprise. These matters have been well discussed by many writers and speakers and need not receive extended treatment at this time, although they are of very great importance. The second and more general approach recognizes the deeper significance of inventory and the fact that every segment of a wholesale business must be related directly to it. Here reference must be made to many current developments in the business world which are of special concern to wholesalers.

RECORDS, SAFEGUARDS, STOCK-TAKING AND SAFEGUARDS

Inventory control can to some extent be reduced to routines, procedures and semi-automatic measurement of success or failure. The basic problems, objectives and methods are the same in every business. The following notes review some of these matters, draw attention to many specific difficulties faced by the wholesaler and note the areas in which competitors are likely to have advantage over him.

1. *Record Keeping*

The most complete record of stock is that which provides continuous knowledge of the quantities and costs of every item of merchandise which should be on hand. With such information, buying is simplified, obsolete or slow-moving stock is readily identified, customer disappointment is minimized, independent checks on the integrity of the staff are possible and the preparation of financial statements is facilitated. These perpetual inventory records can be maintained by manual or punched-card methods.

No full-line wholesaler in Canada has such a record. The reasons are well-known. The very large number of items stocked, the low value of most units of inventory, the relatively small sales volume of even the largest wholesalers and the great cost of creating and maintaining such records are most significant. At the present time, various methods are employed to give buyers and sales staff incomplete knowledge of inventory position. Nevertheless, the wholesaler is competing vigorously with organizations that have more complete records and the advantages noted above, and to this extent he competes at a disadvantage.

2. *Theft, Waste and Damage*

Control over inventory leads directly to ability to minimize theft, waste and damage. The keys to success include extensive records, adequate supervision, staff training, well designed storage arrangements and the use of efficient transport and handling equipment.

Canadian wholesalers and their competitors present a wide range of attitudes and safeguards. On one hand, it is not difficult to find cases of barefaced theft made possible by a multiplicity of unguarded exits from the warehouse and of tolerant expectation that employees will "sooner or later acquire everything they want." At the other extreme are high fences and uniformed guards.

Statistics are not available, but the losses resulting from theft, damage and waste are substantial. The organization which can reduce, measure and control such losses has a competitive advantage.

3. *Stock-Taking and Stock Control*

When perpetual inventory records are not available, effective control of inventories must be based to a substantial degree on regular, or continuous, physical stock-taking. By counting merchandise, management secures knowledge necessary for intelligent buying and strategic selling.

Physical inventories are costly. The burden can be reduced in many ways: by adoption of a carefully designed system, by using experienced warehousemen, by proper warehousing including logical arrangement of merchandise, by estimation of quantities rather than exact counting in some circumstances, and by intelligent use of the information obtained from the physical stock-taking.

The practice among Canadian wholesalers varies greatly. An annual inventory is considered sufficient in some cases. Lack of frequent listings may be replaced in part by information passed from warehousemen to buyers. In other wholesale operations

a continuous counting, carefully scheduled, is the task of several well-qualified employees and the data gathered is used as a basis for careful buying and trimming of inventory.

Stock control is likely to be most complete in specialty houses or in the larger full-line businesses. In small, full-line wholesalers the single buyer will have almost as many items to consider as are divided among several buyers in the large concern. In chain stores those who perform the wholesale function have considerable advantage. They handle comparatively few items, deal with a limited number of suppliers, call for expert opinion when required, are likely to have complete records and command alternative outlets. Here, control over inventory is greatest and carries important competitive advantage.

4. *Turnover*

The importance of stock turnover in controlling inventory should be fully accepted by all wholesalers. In general terms, the higher the rate of stock-turn the more efficient the operation, and profits should be higher. Rapid turnover reduces occupancy expense, investment in inventory, insurance, handling charges, obsolescence, losses from price declines and spoilage. On the other hand, high turnover may result in inability to fill orders, customer dissatisfaction and the expense of handling back orders and frequent purchases.

Measurement of turnover for a whole inventory is a very rough assessment of performance and serious reliance on it is likely to result in difficulty. More careful analysis is necessary if truly useful measurements of success or failure are to be available. Study of departments will frequently reveal the need for action. The rate of turnover of individual items is important too. Although turnover in total may appear to be satisfactory, detailed analysis will usually disclose that important commodities with high profit margins and low handling costs are turning very slowly. This discovery will temper the initial satisfaction.

Overstocking is a major danger in a wholesale business. There are many ways of reducing the potential losses: give buyers adequate information about present inventory; have buyers and sales staff exchange opinions; reduce the number of substitute items carried; eliminate items for which there are infrequent calls; organize effectively—that is, assign responsibility specifically; sell inactive stocks quickly, even at a loss. The most important step in controlling overstocks is to secure knowledge of all items of inventory on hand. This data makes possible more appropriate buying and proper selling emphasis.

Detailed knowledge of stock turnover is available to few Canadian wholesalers on a systematic basis. Many of their competitors in chain or specialty stores do have such knowledge and make very effective use of it in selecting, discarding and pushing merchandise. In general, their policy is this: if an item does not turn over quickly it is dropped.

5. *Profit Margins*

The argument and conclusions under this heading parallel those just presented in connection with turnover.

Gross profit margins are a vital measure of success in any wholesale business. Probably all wholesalers are aware of this and watch their *overall* gross profit. Few are able to measure the degree of success attributable to departments, salesmen, suppliers, customers and individual items of merchandise. Without such knowledge management is seriously handicapped in their efforts to direct and control staff or to select and discard merchandise.

As in the case of turnover, many of the wholesaler's competitors in department stores, chain stores and mail order houses are not so hampered. They can watch margins carefully and govern actions appropriately. Moreover, their mark-up is established by reference to the cost of merchandising individual items and not by the application of traditional average percentages which are usually unreal when applied to specific articles.

Turnover rates and gross margins must be taken together. High margins do not guarantee profit, nor does a high rate of turnover. The two must be balanced *for individual items* in order to achieve maximum success.

There can be little doubt that wholesale merchants carry many items upon which they lose money because of insufficient mark-up. Insofar as this is the result of intentional policy based on understanding, it may be reasonable; too often, the situation exists because of ignorance of the facts, habit, or circumstances which appear to be beyond control.

OTHER FACTORS IN THE CONTROL OF INVENTORY

The preceding section contains reference to the basic elements of inventory control and to some of the handicaps which face Canadian wholesalers at the present time. In addition, there are many more general influences affecting inventory control and the wholesaler's welfare. Some of these will be discussed briefly.

WAREHOUSE LOCATION

The cost of laying down inventory in a warehouse and of transferring it to a customer depends to an important degree upon the location of the warehouse. This is a significant determinant of a wholesaler's ability to compete with others, whether they are wholesalers in the strict sense, or otherwise performing the wholesaling function.

Many wholesalers regard their location as forever fixed. This may be a fatal attitude for some. Competitors acquire sites which have been selected with great care and after extensive study of many factors which cannot be noted here. A warehouse which was well-located 75, 50 or even 25 years ago may now be untenable because of population shifts, changed property values, traffic congestion, new methods of transport and the impossibility of economical expansion, among other things. A new location may be the condition of survival.

BUILDINGS, FACILITIES AND LAYOUT

Very important changes have taken place in recent years in building design, methods of handling merchandise and warehouse layout. Single-storied buildings are more efficient than those with many floors. Lift-forks and conveyor belts are replacing man-handling and elevators. Careful planning of space-use saves much cost. Each of these new features contributes to control over inventory and the reduction of operating expenses.

Wholesalers who do not adopt these methods are likely to be less efficient than their competitors.

INTERNAL ORGANIZATION

Basic to inventory control is appropriate organization of the business. Essentially, the total managerial responsibility must be broken down into suitable parts, usually referred to as departments, specialized tasks must be assigned, and responsibility and matching authority given to individuals. Provision must be made for the co-ordination of individuals to whom well-defined objectives have been given. While the head of the organization must accept final authority and responsibility, he must be willing and able to permit his subordinates to operate freely within the framework which has been established. He must not expect to have full knowledge of all details, or to have a voice in every minor decision.

Only in recent years have these principles of organization been clearly recognized by businessmen and allowed to change their management methods. The wholesaler's aggressive present-day competitors, and some wholesalers too, are well aware of the great power created by serious acceptance of modern organizational techniques.

There are good reasons for believing that many managers of substantial wholesale organizations continue to conduct their affairs in ways which were appropriate only when the business was much smaller and competition less keen. Without acceptance of modern business practices, their competition with others who are better organized will be ineffective. The results of such unfavourable competition may not be apparent quickly, but they are certain.

BUYING

There is little need to emphasize the importance of the buying function, nor is there necessity to dwell upon the relationship between good buying and appropriately controlled inventories. The successful wholesaler stocks the right merchandise, at the right time and price, in quantities which are well related to current demand.

Successful wholesaling, whether by wholesalers or others, is based on the adoption of carefully-selected buying policies. These general rules are related to the size of orders given to suppliers, the spreading of orders among competing suppliers, the way in which orders are placed, the treatment of speculative opportunities, the freedom given to buyers, and many other matters. In modern business great care is devoted to the establishment of suitable policies. They are reviewed frequently in the light of changing circumstances and modified as may be required. Blind adherence to old-established rules is dangerous and will not result in effective control over inventories or successful competition in the market place.

Buying activity must be based on understanding of present stocks, past experience and probable future requirements. These needs can be achieved by attention to inventory records, physical stock-taking, long association with the business and good communication among buyers, salesmen and customers. The modern businessman devotes a great deal of attention to record-keeping, forecasting, market surveys and current studies of great variety. Those who deny themselves access to such information and inspiration are under serious handicap.

Specialization in buying merits another passing reference. In large, well-organized businesses individuals have opportunity to gain extensive knowledge of a comparatively small group of products and thereby achieve advantage over the buyer who attempts to deal with a much greater range.

RECEIVING AND SHIPPING

The receipt and shipment of merchandise should be established as two separate functions. When the person receiving goods has additional duties, his attention is easily diverted. Clear definition of each responsibility should result in better control over inventory through more careful checks on quantities and quality, and in the accurate completion of prescribed paper work.

Large wholesaling organizations have some advantage over smaller businesses in that receiving and shipping can be clearly separated, the advantages of specialization realized, and the possibility of error and theft minimized. The small business need not be seriously handicapped if suitable safeguards are installed.

WAREHOUSING

Control of inventory is very closely tied to warehousing activities. Warehousing includes the movement of incoming and outgoing goods, handling methods and storage arrangements. Good warehousing provides ready access to goods on hand, efficient assembling of orders, inexpensive preparation of records and low operating costs.

Very important improvements in warehousing have been devised in the last 20 years. Among them are carefully-planned arrangements of goods, product coding, use of pallets, skids and conveyors, and assembly-line methods in order filling. Each of these improves ability to service customers' needs and results in lower handling costs, quicker movement of merchandise, full utilization of available space, and reduced investment in inventory.

Only a few Canadian wholesalers have adopted the new streamlined warehouse operation in an advanced form. Some others have gone part way. Many of the wholesalers' competitors—that is, mail order houses, large manufacturers' wholesale branches, and chain stores—are using the new techniques. Generally speaking, streamlined warehousing is available to the large operator rather than to the small. Substantial capital investment is required and with this comes need for extensive utilization of available capacity. This is an important reason for the new emphasis on *movement* rather than *storage* in warehousing.

SUMMARY AND CONCLUSION

Many important conclusions follow from the preceding comments.

• Inventories have been, are, and will continue to be the heart of the wholesaler's business. Everything else is related to them. Control of inventory is vital to the success of the enterprise, and Canadian wholesalers should direct careful attention to many problems which are related thereto.

• The present rate of change in marketing patterns and in the balance of marketing powers is greater than ever before and will continue to be an important force. The role of present marketing institutions is changing. The future of many individual businesses is uncertain. Reflection on the course of events in the grocery, dry goods and drug trades during the past 40 years will give some guidance for the future to those dealing in other lines.

• The wholesaler must face increasing competition of great strength from chain stores, mail order houses and manufacturers. For example, the hardware wholesaler's position is most seriously influenced by the impact of the new competitors on his retail customers. The retailer's future will determine that of the wholesaler, in substantial measure. The individual retailer must contend with the power and specialized skills which are available at the retail level to the chain, auto accessory, grocery and drug stores, mail order houses and even to the vendors of packaged cereals. This is a very uneven struggle. Wholesalers can and must do more to assist these customers, and so protect themselves. Attention is presently being directed by a few of them to stock planning, basic stocks, store layout, credit selling, printed order forms, co-operative advertising, catalogues, better advice by sales representatives and other things.

• The most successful operators at the retail level carry a relatively limited line of products. The strongest of these competitors insist that each item is carefully selected and tested for quality. Profit margins are generally high and are carefully computed. Rapid turnover is demanded. On the other hand, to continue our example, the typical retail hardware stocks a very large range of items including many with very low margins, slow turnover, high obsolescence and wastage. He provides advice, choice of merchandise, service and a friendly atmosphere—but loses money with every pound of nails and 8 x 10" piece of glass. The hardware wholesaler suffers for similar reasons. His customers, collectively, demand a very wide selection of merchandise. Small orders are frequent and rapid delivery imperative. Many of his competitors face no such exhausting demands.

This situation is unstable in a very real business world. Co-operative voluntary alliance between wholesaler and retail hardware merchants promises some relief from these problems. Review of costs and prices of those items and services which their new competitors do not choose to carry, followed by higher prices, may help also.

• Large-scale operations are not always more efficient than small, and ever-increasing size does not continue to produce economies indefinitely. However, among wholesalers at the present time there are many reasons to assume that larger operators have important advantages, and attention has already been directed to many of them. Present circumstances, and study of past developments in similar situations, suggest that part of the solution lies in combination, centralization and consolidation of existing enterprises. In this way important economies could be achieved and profitable use be made of such things as integrated data processing and modern warehousing methods.

• Many wholesalers do not have the accounting and statistical data necessary to compete with those who are so provided. Perhaps some wholesalers do not realize the extent of their handicap, but the rules of thumb and traditional expectation, long accepted by some as sufficient guides to managerial action, are far removed from the certain knowledge of current experience available to powerful competitors.

• Voluntary associations have been formed in some types of business as the result of pressures of the kind we have been discussing. The initiative has sometimes come from retailers, sometimes from wholesalers. The voluntary chain continues to attract attention and offers interesting prospects of relief from the accumulative disadvantages. The advisability of a more systematic exchange of information and experience among wholesalers should be studied. This could take many forms. Financial operating data prepared on a uniform basis could be shared with advantage to all. Credits granted to retailers are now becoming of great importance and the sharing of information would sometimes prevent trouble. Study of common problems could produce useful opinion. For example, the methods used in establishing control over inventory are not all equally valuable. Analysis of this subject would be productive and could be undertaken at low cost.

Wholesaling is a natural and inevitable part of business life, and wholesalers are likely to continue to play an important part in the distributive process in Canada. However, the future of individual wholesalers depends to a substantial degree on three things: (1) recognition of current developments; (2) adaptation to changing circumstances, and (3) adoption of the new methods and techniques of management. Inventory control is closely related to each of them.

USING THE SOCIAL SCIENCES

Basically, the goal of the social sciences is knowledge—objective and disinterested knowledge. Certain social scientists feel that their task ends here. Others, who are apparently in the majority, feel that it is desirable to use the results of research in improving social relations. We share this viewpoint: to borrow one of Durkheim's old expressions, sociology wouldn't be worth an hour of thought if it did not lead to action. Still, it must be stated that research, no matter how liberally endowed, is always slow in producing results. Responsible authorities must realize that the development of the social sciences is a long-term investment. Forcing specialists to produce more than they are able to give can lead only to the collapse of the entire undertaking.

This is particularly so in the field of forecasting. Normally, scientific theory leads to the possibility of predicting events. But too many statesmen and business leaders tend to transform social scientists into fortune tellers and the scientists often do not have the courage to refuse to answer unanswerable questions. Their excuse is that they are trying to improve the prestige of their science but the result often goes contrary to their goal. Think, for example, of the tremendous harm done to economics by imprudent forecasts of fluctuations by many economists.

—*"Unesco and the Social Sciences" by Jean Meynaud, Professor at the University of Lausanne and at the Ecole Pratique des Hautes-Etudes.*

A Psychologist Looks at
MOTIVATION RESEARCH

Most of the recent discussion of consumer motivation research has been conducted by people trained in the fields of marketing, marketing research and advertising. What is the reaction of the trained social psychologist to this discussion? What is known about thee techniques, and what are their limitations? In the following article, Dr. Paul addresses himself to these and other questions regarding motivation research.

JOHN PAUL

Consumer motivation research, as currently practised, represents the application of some of the most recent theories and tools of the social sciences to the solution of a specific set of marketing problems. Consequently it is of interest both to the businessman and to the social scientist.

The immediate interests of the businessman can be expressed in such questions as: Can MR provide useful information not obtainable by other means? How much does it cost? Under what conditions is it likely to be worthwhile to use it? In the long run both the businessman and the social scientist may be more interested in such questions as: What is the effect of motivation research, as currently used, on society? What are the kinds of problems to which MR techniques could be applied with maximum benefit to business or to society?

The current practice is to use motivation research as a subsidiary tool in advertising, marketing research and product design. The firm often decides first on what product or service it proposes to market, a decision which is rather narrowly limited by the existing plant facilities and by the skills and past experience of the personnel. The task of motivation research is to provide hypotheses or recommendations which may influence advertising, packaging, brand-name selection, or minor modifications in the design of the product. The first half of this paper will attempt to clarify some of the advantages and limitations of the use of MR within this context; the second half will be devoted to the discussion of other potential future applications of motivation research.

WHAT KIND OF INFORMATION DOES RESEARCH PROVIDE?

In discussing motivation, psychologists customarily make a distinction between needs, drives and motives. A need refers to a lack or a deficit within the individual. It may be a physiological need for food, for water or for air, or a social need for affection, for recognition or for prestige. The term drive implies that a need supplies an impetus to behaviour, and a motive implies that a drive has direction toward some particular goal.[1]

Physiological needs are inherited and even major social needs are so well established during our childhood that they can be regarded by the businessman for all practical purposes as fixed, subject only to the developmental changes accompanying the process of ageing. Most human needs can, however, be satisfied by a wide variety of means; they can be channelled within broad limits toward different goals. Further, a particular motive may be related to the satisfaction of more than one need.

Channelling is influenced by the perceptions, attitudes, social values and emotional associations of the individual, and it is accomplished through learning. Learning is a rather complex, circular process, as the individual's perceptions, attitudes and values are themselves a product of learning; and they in turn influence future learning and so forth.

Some elements of the processes of learning, perceiving, attitude-formation and emotional asso-

[1]Morgan, C. T.: *Introduction to Psychology.* (McGraw-Hill Book Company, Inc., New York, 1956.)

ciation occur at a conscious level; a great deal of them, however, occur on a non-verbalized, semi-conscious or unconscious level. A normal adult is usually quite aware of the things he likes and dislikes and often knows what he wants, i.e. what his immediate motives and goals are. But very often he may be only partially aware of the reasons why he likes or dislikes something or somebody. We may know what we prefer, but often we are not aware of some of the factors which have influenced the development of our preferences, and frequently we attribute them to conditions other than the ones which were actually operative in their development.

The most significant advances which have taken place in psychiatry, psychology, social psychology, sociology and cultural anthropology during the last three decades consisted of the detailed study of such conscious and unconscious individual and social processes. Suitable empirical techniques were developed to investigate them and theories were advanced to explain their mode of operation. The results can be summarized as follows:

1. All the available evidence suggests that individual motives, choices and preferences are neither haphazard nor accidental; they are the joint product of the operation of conscious and unconscious processes, which operate according to discoverable natural laws. Not all of these laws have been discovered, but sufficiently rapid progress has been made over the last three decades to support the view that they are all potentially discoverable.

2. The laws governing the operation of unconscious processes are often non-rational, but seldom irrational. That is to say they do not lack order in their mode of operation, but this order is often different from that which regulates conscious, rational or logical processes.

3. Non-verbalized, unconscious and non-rational processes, both individual and social, play a much greater part in influencing our behaviour than it has been generally suspected or believed in the past.

4. A number of empirical methods and techniques have been already developed which are suitable for the investigation of unconscious processes. A great deal of academic research is being devoted to their further refinement and to the search for additional tools for this purpose.

5. The rate of accumulating empirical information has thus far exceeded the rate of intellectual digestion. A number of alternate theories have been developed to explain the mode of operation and interaction of conscious and unconscious processes. Each of these theories explains more or less satisfactorily some of the available information. While there is a great deal of overlap between them, they each tend to focus on different aspects of behaviour. No comprehensive theory, which accounts satisfactorily for all of the available information, has been developed to date. The social sciences have their Galileos; they are still waiting for their Newtons and Einsteins.

This thumbnail sketch of a vast and significant area of human endeavour, necessarily distorted somewhat by the need to condense, may help to explain some of the peculiarities, advantages and limitations of motivation research. First of all it explains why such great attention is paid by motivational researchers to the study of the perceptions, emotional associations, social values and attitudes of the consumer. The reason is that all these factors influence the development of motives, and they are more amenable to change than basic needs. Secondly, points 4 and 5 of our above summary may help to explain why two well-qualified MR investigators may draw divergent conclusions from the same data.

EMPIRICAL FINDINGS VERSUS INTERPRETATION OF FINDINGS

Social sciences have to date made greater progress in developing relatively reliable tools for the investigation of unconscious perceptions and emotional associations than in developing a comprehensive theory to account for them. The tools and techniques themselves are crude, but they are far superior for getting information of this type than any other method so far available. Each of the empirical methods used possesses its own characteristics: some methods, such as depth interviews, tend to provide a greater number of potentially-valuable leads; other more-structured testing methods tend to provide less information, but with a somewhat greater degree of certainty. Nevertheless, when appropriate research methods are used by skilled investigators the empirical findings on any given product are reasonably reliable and can be expected to be at least non-contradictory even when different methods are used to study a given problem.

So far so good, but now the problem of interpretation enters. MR investigators tend to come up with several factors which all seem to be relevant to consumer motivation with regard to a given product—quite correctly so, as most forms of normal human behaviour are the result of the simultaneous operation of more than one factor. The client, however, expects not only findings but also an interpretation of the findings, especially in terms of stating which of the several relevant factors disclosed are of dominant or primary importance. He may also expect that the motivational researcher should draw some conclusions about the practical

implications of his findings. Making interpretations and drawing conclusions depends, however, on the particular theoretical orientation of the researcher. As such orientations tend to differ, it is quite possible to find two well-qualified investigators who may draw different or even diametrically-opposed conclusions from the same set of data.

The main theoretical orientations current today —sociological, psychoanalytical, perceptual, self-oriented and learning-oriented—are on the whole not mutually inconsistent. They tend to agree on some basic principles, but they differ with regard to the emphasis placed on the relative importance of various factors operating in a given situation. A sociological orientation would tend to emphasize cultural factors, social-class values, group norms and group belongingness. Psychoanalysts would tend to accept the existence of such factors, but would regard them as secondary compared to the importance of the consumer's emotional relations with his parents in early childhood or to the sexual symbolism associated with a given product. Followers of other theoretical orientations in turn would tend to pay maximum attention to perceptual elements, to learning processes or to the question whether certain values and attitudes associated with a product may or may not be consistent with the self-picture of the typical consumer.

Many practising psychologists nowadays tend to be familiar with several of these theories, and are developing some skill in applying them selectively to the interpretation of problems to which they may be best suited. Nevertheless the existence of alternate theories, without any clear evidence on the basis of which any one could be regarded as definitely superior in all situations or even in any one situation, tends to produce some variety in the interpretation of data.

The existence of different theoretical orientations does not mean that motivational researchers should not be encouraged to interpret their data. Their conclusions can often be very valuable to the client and frequently have been in the past. But it would be wise to insist that they should draw a clear distinction in their reports between empirical findings and between their interpretations of these findings. Most MR firms tend to report their practical recommendations in a separate section, but few reports make a clear distinction between empirical findings and the interpretation of these findings. This is a distinction upon which clients should insist in their own interest, even if this process involves some unavoidable repetition.

The importance of making this distinction can be demonstrated by examining two independent MR investigations of the same product, to wit, prunes. The first investigation was conducted by the Institute for Research in Mass Motivation, headed by Ernest Dichter,[2] the second a year later by James Vicary.[3] The two studies came up with opposite conclusions on an item of major importance in marketing this product. Dichter recommended that any reminder that prunes can be used as laxatives should be carefully avoided, while Vicary suggested that "advertising copy *should* mention the laxative features of prunes."[3]

The two organizations employed different methods and different sample sizes. Dichter used depth interviews with 80 subjects while Vicary used a word-association test with 200 subjects. In addition Vicary, who was already aware of the importance of the laxative theme before he started testing, either from information gained from his preliminary interviews, or from knowledge of Dichter's results, included an additional step in the design of his study. This consisted of including the word "laxative" in one-half of his tests, and omitting it from the other half.

In spite of differences in method, sample size and geographical distribution of respondents, the two studies were remarkably similar with regard to their principal empirical findings. Both found that a "laxative-association" was predominant, that the "dried-up" characteristics of the prune produced a frequent and strongly negative association, that "fruit" and "plum" associations were preferred by consumers.

The Dichter study came up with a great many additional hypotheses, or leads, which is a characteristic of the method used, while the Vicary study pinpointed in more detail some of the implications of the laxative theme, again a characteristic of the more structured methodology employed. Nevertheless the only real contradiction between the two studies was in terms of the conclusions drawn from rather similar information. They both found that "dried-up" characteristics, "fruit" and "plum" associations, and the "laxative theme" were important in advertising the product. They agreed on the first three items, and made similar recommendations on how to handle them, but while agreeing on the importance of the last-mentioned item, they disagreed on the method of dealing with it.

What are the practical conclusions to be drawn from this comparison? First it demonstrates the

[2]Harvard Business School Case Study, AM 58. E. Dichter. Institute for Research in Mass Motivations, Inc., New York. *Progress Report.* Psychological Research Study on the Problems of Selling and Advertising Prunes.

[3]Harvard Business School Case Study, AM 62. James M. Vicary Organization, New York.: Consumer Attitudes of Importance in Advertising Prunes.

importance of distinguishing between empirical findings and interpretation of findings. Secondly it illustrates the value of using more than one method of investigation. One may start with a broad, interview-type study first, which tends to yield a large number of leads. Ideally this should be followed by a more structured study, which can be used to reduce this number by pin-pointing the most promising ones and may also serve a useful purpose in investigating the most important factors in greater detail. The third conclusion to be drawn is that when two or three alternate interpretations of findings are possible, they should all be tested empirically on a small scale. Any competent psychologist can evaluate the adequacy of the methods used to gather information; there is absolutely no basis at present on which the comparative merits of competing interpretations can be judged other than the acid test of results.

THE COST OF MOTIVATION RESEARCH

One day a young man entered the show room of a famous manufacturer of exclusive yachts. He asked the salesman the price of the various models which were exhibited. "Dear sir," the salesman told him, ushering him towards the door," if you have to know what the price of these yachts is before selecting one, you can't afford to buy one."

The same principle applies to some extent to motivation research. Some successful projects were completed on a relatively modest budget of $3,000 to $4,000, but in many cases the client-firm may have to be prepared to invest several times this amount to follow up promising, but inconclusive findings before obtaining worthwhile results. The process has some similarities to the development of new antibiotics or tranquilizers. A firm may be lucky and develop a successful compound after a few trials, or it may have to continue for a long time before a useful product is developed.

Ideally an MR study on an important product should be conducted simultaneously or consecutively by at least two firms, using different methods and having different theoretical orientations. Any proposed change in marketing policy should be pretested by experimental sales and advertising tests. If the MR studies came up with two or three alternative suggestions, all the alternatives should be explored by means of such pilot studies before major policy decisions are taken. This of course is a very expensive procedure, but it is one that would provide maximum returns for the firm that can afford it.

This does not mean that smaller, limited-budget MR studies are not justified in many cases. The probability of success, however, will bear some relation to the size of the investment.

WHEN ARE MR STUDIES LIKELY TO BE WORTHWHILE?

There are six types of principal situations in which MR studies are likely to prove profitable for firms undertaking them. The first is that of the firm operating in an industry in which non-price competition is the rule, i.e. in which the principal means of competition consist of advertising, product differentiation, brand-name competition, improved packaging or improved service. In general, occasional MR studies are likely to be profitable for almost any firm which has a large national advertising budget.

Secondly an MR study should be considered if a fair-sized firm, operating in an industry in which products are relatively standardized and uniform, desires to protect or expand its share of the market by developing a brand image or some other means of product differentiation. Almost all industries in which the utilization of brand loyalties and similar devices is predominant today were at one time characterized by vigorous price competition. It is quite possible that some firms in some of those industries which today do not utilize such techniques could do so with great profit to themselves. An MR study could provide invaluable initial leads both for distinctive product or package design and for potential advertising appeals in such cases.

Thirdly, MR studies are warranted in the case of firms which possess a monopoly position in order to (a) help them develop an effective public relations policy to protect them against demands for nationalization or to protect them against excessively rigorous public restriction of their rates, and (b) to improve their marketing position in competition with the products and services of other industries which may serve as substitutes for their own (e.g. gas vs. electricity).

MR studies can very usefully serve a particular industry, without influencing the relative positions of individual firms within that industry, by providing leads for the expansion of the total market for the product of that industry. The prune industry and the coffee industry are examples of industries which have already utilized this approach, apparently with notable benefit to themselves.

MR studies can prove valuable in the marketing of such intangible services as insurance, banking services, or investment services. In buying such services the perceptions, attitudes and expectations of the consumer, in no way limited by the physical appearance or performance of a tangible product, obtain a paramount importance.

Last but not least, MR studies can be extremely useful to a domestic producer who seeks to enter new export markets or who wants to increase his existing volume of exports. The culture, customs, habits, likes and dislikes of different nations (even of nations as closely related as, say Britain and Canada) differ greatly. It is quite possible that marketing policies, promotional methods and packaging which are very successful in the domestic market may be ineffective or even downright repugnant in an export market. Further, the utilization of such devices as the creation of brand loyalties among foreign customers is just as possible in export as in domestic markets, and they may provide to the exporter some degree of protection against the vagaries of international competition. In terms of future development the study of consumers in export markets is probably one of the most important potential areas of application for motivation research, especially if tariffs and currency restrictions, which nowadays hinder international trade, are reduced or removed.

THE SOCIAL EFFECTS OF MOTIVATION RESEARCH

In the previous pages some of the advantages and limitations of MR as currently used have been discussed. Such a review automatically raises the question: what are the social effects of MR, if any? What are they likely to be if its use is expanded? One possible view has been advanced by Vance Packard[4] who in his book, *The Hidden Persuaders* described such techniques as tending to manipulate and exploit the unsuspecting consumer. He also explored the potential political dangers which the use of such techniques could present to a democracy.

There appears to be little substance in such accusations, apart from their sensational character, which is a real asset in producing a best-seller. Any social scientist or psychiatrist who worked experimentally or clinically with unconscious motives and perceptions is primarily impressed by their excessive resistance to change. Conscious factors are far easier to modify than unconscious ones. MR techniques do not change unconscious factors; they are only a means to their more accurate recognition, and even in this respect they do not possess a monopoly.

Non-rational factors have always been recognized and utilized both in business and politics. Such devices as a flag, national or party songs, religious rituals and ceremonies or speeches and articles appealing to the emotions have been utilized in social and political life since time immemorial. If our business practices or political life possess any undesirable features, such features existed long before MR did. Emotional and prestige advertising, appealing to unconscious motives, has been used for many decades. MR studies may help in refining such techniques, in giving a competitive edge to the firm which utilizes them, but any suggestion that they are likely to have a major impact on society when used in their present form would represent a completely unrealistic overestimation of their importance.

The main social problems involved may be rather that the present practice does not represent the most efficient use of MR techniques; that it may involve an inefficient allocation of important economic and human resources. In our society the business sector has been progressing rapidly during the last century, improving its methods of production, distribution, financing and internal organization. This has not been the case with our educational organizations, our public health services, our legal system, our research institutions, and in general with the majority of our vital, but non-profit making, organizations. The progress of our non-business institutions has been much slower than that of business firms, their performance relatively less efficient. A socially dangerous imbalance in the allocation of resources developed as a consequence.

The total income in terms of salary, bonuses and stock-incentive plans of the president of a corporation employing a few thousand workers may be several times greater than that of the Prime Minister or his Ministers. These latter people supervise more employees, administer far greater resources, and deal with issues of much greater social importance than the president of any one corporation. Members of Parliament, who are supposed to vote on a national budget running into billions and decide on matters of peace and war, are paid much less than the average comptroller of even a small firm. A doctor or psychiatrist in private practice can earn two to three times as much as his colleague engaged in public health work or preventive medicine. Accepting an appointment as a Judge represents a real financial sacrifice to a successful lawyer. School teachers, university professors, research workers engaged in basic research, public servants or police captains are usually paid far less than people, with similar qualifications occupying positions of comparable responsibility, receive in private industry. Some of this discrepancy exists even at lower levels; it becomes particularly marked in the upper echelons.

The consequences are socially wholly undesirable. The best qualified, the most enterprising individuals tend to embark on a business career, thereby

[4]Packard, V. *The Hidden Persuaders.* (David McKay Co., Inc., New York, 1957.)

facilitating further the continued advance of industry and relative stagnation of our non-profit making institutions. Money is of course not the only consideration in selecting a career, but it does help, and the wide differentials in the remuneration of public versus private service cannot fail to have an effect. It may be argued that some of the services now performed by various public organizations could be rendered more efficiently by private firms. Whatever the pros and cons of this view may be, the fact remains that many services, such as education and basic research, which are more vital in the long run to our social life than the sale of soft drinks or electric hair-curlers, are rendered by people who are underpaid and by organizations which are relatively inefficient.

One of the most important potential tasks of MR may be to investigate means whereby people can be persuaded to pay more attention to, and devote more money to, their public services. In many areas it may not even be necessary to increase the total amount of money now spent on a public service; rather a more economical allocation of that money may be required. At least some of our public services could be improved if the quantity of the personnel were reduced and its quality improved; if greater incentives for efficient performance and for experimentation with improved and more economical ways of rendering services existed. This may involve higher salaries, especially at the top, better promotion opportunities, better supply of such auxiliary services as secretaries and modern equipment, or promotion by merit rather than by seniority.

The greatest stumbling block in implementing such a program is the reluctance of the voters to agree to such changes. The average taxpayer is more willing to consent to the hiring of more people at modest salaries to perform a given task than to consent to the paying of several times his own income to policy-forming public servants or to highly skilled specialists, although business experience indicates that often this is the more economical course. An investigation of consumer (i.e. taxpayer) motivation in this regard may pay rapid dividends in improved and progressive public services.

Business firms already know a great deal about consumer psychology. A firm which holds completely erroneous ideas about consumer motivation does not survive very long. Firms which use MR studies do so to improve and refine their already relatively highly-developed knowledge. In contrast, educators, scientists engaged in basic research, public health officers, law-enforcement officials and other personnel engaged in socially vital, but non profit-making, tasks do not know how to persuade the public to support adequately and wisely such forms of long term social investment. MR techniques could probably serve social interest better if they were devoted to the analysis of consumer motives on how to sell better education, how to sell investment in basic research, or in preventive rather than in curative social action.

MOTIVATION RESEARCH VERSUS NEED RESEARCH

Motivation research is used to a large extent to help in increasing the sale of products and services which are already being produced or rendered. The questions asked by the marketing executive of the motivation researcher are usually in terms of products already made. Ideally the question asked should be: what are the important human needs which are presently not too well satisfied and which could be satisfied? Every practising psychologist is struck by the degree to which some of the basic needs of millions of people are not satisfied. This situation is partly due to the radical changes in our social life produced by the industrial and urban revolutions which destroyed old forms of satisfaction without replacing them with new ones, and partly to our increased material standard of living, which creates new needs.

Such an approach would involve a completely new orientation to the role of motivation research in business. It would involve a focusing on consumers' needs, on their identification, and on the development of means of satisfying them rather than being guided by the existing skills, organization and plant capacity which may or may not be suitable for satisfying such needs. Need-research studies may come up with such answers that people have a greater need for companionship, for new forms of social organization which provide a feeling of comradeship, a feeling of worthwhile achievement and belonging than they have for Cokes or Cadillacs, and that they would be willing to pay more for the former if they only knew how to obtain it. Whatever the findings might be, the next step would consist in designing and developing services which could serve to satisfy those needs which were so identified. Once this has been accomplished, the means developed for the satisfaction of such needs could be translated into and studied in terms of specific motives.

The answer to such a suggestion may be that this has nothing to do with business. Present forms of business organization cannot conceivably serve in satisfying such vague social needs of individuals.

Such an answer may be obvious, but not necessarily accurate. Historically private business tended

to develop first in the direction of producing goods, but over the last two centuries the sale of such intangible services as insurance, investment or banking services became increasingly important. It is no more fanciful today to expect that efficient and profitable types of business enterprise could be developed to satisfy such social needs as belongingness or a sense of achievement than it would have been to suggest 300 years ago that protection against fire, earthquakes or financial disaster to the family in case of death could be bought and sold with satisfaction to the purchaser and profit to the seller. Besides, there is no certainty that all or even most of the unsatisfied needs to be discovered are of the type described above. It is quite possible that some important unsatisfied needs may be served better by the provision of the new, tangible products rather than by the development of new services. Nobody can really answer this question until some extensive need-oriented research studies are conducted and their results become available.

Personally, I am convinced that one of the most important potential future applications of motivation research to business lies in this direction. The history of applying the principles and techniques of the natural sciences to industry followed a similar pattern. First minor attempts were made to improve existing, traditional methods of production. The real contributions of the natural sciences to industry began when scientists were given adequate and sustained financial support to explore what seemed to be important to them and freedom to disregard the limitations of existing production methods. The result was the discovery of new products, the development of new industries, and the reorganization of traditional methods of production so completely that the methods eventually used bore little resemblage to those previously employed. The major contribution of the physical sciences to business consisted in creating the basis for such entirely new industries as the electronics industry, the synthetic drug and synthetic fibre industries, the synthetic rubber and plastics industries, and so forth, and not in the introduction of minor modifications to existing methods of production.

The slogan and moral justification of business is: "we serve the needs of the consumer". Currently a great deal of lip-service is given to this slogan, but in terms of actual business practises it really means: "we serve those needs of the consumer which we can conveniently supply with our existing plant and business organization". An exception to this rule is the development of new products based on the discoveries of research in the natural sciences, but such developments tend to be restricted to the satisfaction of motives which are already developed and recognized.

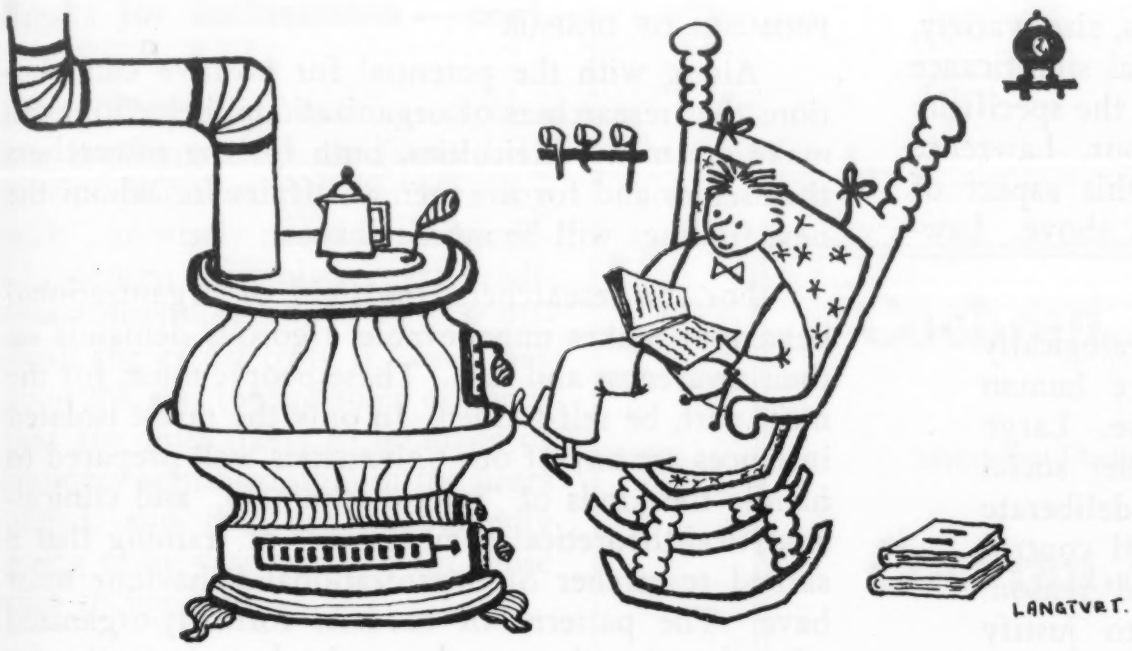
It seems reasonable to assume that some of the most significant future successes in business will be achieved by those enterpreneurs, perhaps not yet born, who will take the slogan: "business begins with the needs of the consumer" seriously. Such enterprising individuals may find that the most promising application of MR techniques consists in finding out what the public needs irrespective of the limitations of present methods of organization and production.

The present utilization of the techniques of the social sciences in industry is restricted to a patchwork attempt to improve or refine already existing methods in production or marketing. Business reaped the maximum benefits of discoveries in the physical sciences by supporting basic research in these sciences and by giving freedom to the researcher to follow up unorthodox or unexpected findings. Such an approach proved to be profitable to business firms, and it was also instrumental in the rapid development of the physical sciences. It is very likely that a similar policy with regard to the social sciences would provide comparable profits to business and also opportunities for further development for the social sciences.

SUMMARY AND CONCLUSIONS

Unconscious or unverbalized attitudes, perceptions and emotional associations play a very important part in human behaviour. Motivation research represents the application of some empirical methods and theories of the behavioral sciences to the investigation of such unconscious or unverbalized aspects of consumer motivation. Such empirical methods are becoming increasingly reliable; several useful theories to interpret empirical findings also exist, but no comprehensive, empirically-supported theory of human behaviour has been developed to date. This situation sometimes leads to divergent interpretations of data; consequently it is advisable to distinguish in MR reports between empirical findings and the interpretation of such findings.

Although good motivation research tends to be expensive, there are many situations in which it can be profitably employed by a firm or by an industry. It is quite possible, however, that the present mode of application of motivation research does not represent its socially most effective use. It is quite possible that MR techniques could be more useful to business and to society if they were employed to improve the quality of our public services and to seek out important, but presently neglected, needs of the consumer rather than if they were employed exclusively, as they currently are, to assist in the marketing of already existing products and services.



BOOKS FOR THE BUSINESSMAN

THE EMERGING FIELD OF ORGANIZATIONAL BEHAVIOUR

A review of four new books with some personal reflections on what they foretell for Business Administration

1. *Organizations,* by James G. March and Herbert A. Simon. Wiley & Sons, Inc., New York, 1958. 262 pp., $6.00.
2. *The Changing of Organizational Behavior Patterns,* by Paul R. Lawrence, Division of Research, Harvard Business School, Boston, 1958. 237 pp., $4.00.
3. *The Motivation, Productivity, and Satisfaction of Workers,* by A. Zaleznik, C. R. Christensen, and F. J. Roethlisberger, Division of Research, Harvard Business School, Boston, 1958. 442 pp., $6.00.
4. *Behavior of Industrial Work Groups,* by Leonard R. Sayles, John Wiley & Sons, Inc., New York, 1958. 182 pp., $4.75.

In recent years, many applied social scientists have increasingly focused their interests on behaviour patterns in modern formal organizations. Some of these people are in traditional university departments in the social sciences, particularly departments of anthropology, psychology, and sociology. Others are working from the vantage ground of professional schools of business and public administration and similar settings, and some are actually in the employ of businesses and government agencies. There are many differences of training and purpose that distinguish these social scientists from one another; but when these people choose to work together, sharing and using their differences and finding their similarities, they can represent a potent force in the development and dissemination of scientific methods and knowledge. Such a potent collaboration is beginning to take form around the rallying point of social processes in formal organizations. We can now speak of "the emerging field of organizational behaviour" to refer to that rallying point. In identifying the field we can point to a body of knowledge which, although as yet very small, is growing and is respectably systematic and coherent in its essential outlines. We can point to methods of research that have sufficient reliability for adding further to the body of knowledge. For the business administrator these developments—the converging interests of many social scientists, the refinement of suitable research methods, the accumulation of a new body of knowledge — hold promises for both hope and despair in the year ahead.

PROMISES OF HOPE

On the side of hope is the observation that formal organization is a significant focus for scientific study in the 20th century. Organizational behaviour is not an idle "ivory tower" interest. Our modern civilization is distinguished, in one major part at least, by the number and variety of its formal organizations and also by the size and complexity many of those organizations have attained. Anyone who would study human behaviour today in its natural setting could hardly escape having to take formal organization into account in at least some measure. The man or men he studied would take him on a tour from one formal organization to another—business, union, church, state, education, eleemosynary, and so on. Even criminals are formally organized.

In addition to their ubiquitousness, size, variety, and complexity, however, an additional significance of formal organizations is described by the specificity of their influence over human behaviour. Lawrence and March and Simon have stated this aspect of significance well in their books listed above. Lawrence's words:

> ". . . these organizations are strategically in a position to greatly influence human behaviour — for better or worse. Large organizations, more than any other social units, have been the centre for deliberate and conscious efforts to plan and control man's behaviour, and with good reason. Organizations are big enough to justify the costs of careful planning of behaviour, and yet small enough to encourage man in the belief he can see some results from his own efforts. And it has also long been believed that those who would change man's behaviour are wise to work on his basic institutions as the strategic leverage points."

Perhaps for far too long we have left the tasks of determining what influence these formal organizations will have on business behaviour to the economists, accountants, and engineers—people who are not experts on the nature of man. Many people believe that it is the way our business organizations have been, and still are, abusing and misusing men and what is natural to men that is wrecking our civilization today. One of the major tasks of the emerging field of organizational behaviour is to examine with precision and depth what business and other formal organizations truly are doing to us as human beings and how they might do better.

In pursuing this task the researchers of organizational behaviour are strategically situated to tap the contributions of many resources. Remember, this field has brought together many people of diverse training. These applied social scientists have close contacts not only with many of the more-pure social scientists and philosophers but also with many practical men of affairs in business, government and other formal organizations. The field of organizational behaviour has well within its potential the provision of a focus through which on the one hand formal organization practitioners—businessmen, politicians, labor leaders, and public servants of many kinds—and on the other pure scientists and philosophers of human behaviour, may communicate with one another toward understanding some of the major social processes of our age.

PROMISES OF DESPAIR

Along with the potential for positive contributions that researchers of organizational behaviour can make are many difficulties, both for the researchers themselves and for the men of affairs for whom the new findings will be most relevant.

For the researchers, the field of organizational behaviour makes unbelievable, rigorous demands on their awareness and skill. These people must, for the most part, be self-trained. In only the rarest isolated instances are any of our universities well-prepared to handle the kinds of "inter-disciplinary" and clinical-analytical-theoretical combinations of training that a skilled researcher of organizational behaviour must have. The patterns of modern formally-organized education, in other words, are inadequate to the demands on social scientists at mid-20th century. That is one finding suggested by existing research in organizational behaviour.

As social scientists seek to break through their traditional research orientations to devise the new methods and orientations demanded by effective study of formal organization, there will be many mistakes, and many occasions for disillusionment and discouragement. Social scientists will have to be as scientific about their science and about themselves as they are about the territory of formal organization they study as their focus. The first promise of despair stems from the size and complexity of the undertaking and the self-awareness the field demands of its students.

For practising administrators, the emergence of the field of organizational behaviour promises comparably heavy demands. The easiest of the demands will be living with the mistakes of the researchers, upsetting as that will be. The hardest part will probably be accepting the findings of the researchers when they are right! (Remember the problems men of affairs had accepting the conclusions of Copernicus, of Darwin, and of Freud!) What many of these new researchers are going to say—some are saying this already—is that administrators must change considerably their ways of thinking and acting if we are indeed to avoid serious consequences of collapse in our whole civilization. This will probably be the pill business leaders will have to prepare themselves to swallow.

FOUR NEW BOOKS IN THE FIELD

All of these observations and reflections are prompted by the four books listed at the beginning of this review. The four books are about organizational behaviour, particularly in business. They depict gropings not only for new methods of research, but also what we can do with the methods we already

have. They show how researchers are breaking through (something much different than "breaking with", as wisely noted by Zaleznik-Christensen - Roethlisberger) traditional disciplines, but also how difficult the effort truly is. And they point the way toward some demands that are quite likely to be made of business administrators in the years ahead, and that are undoubtedly going to be very difficult for those men to live with.

Organizations by March and Simon is a precise and rigorous survey of the existing literature on organization theory. March and Simon have reviewed theories that viewed members of organizations primarily as physiological automators ("scientific management"), others that focused on motivational and effective characteristics of human behaviour, and some recent theories of cognitive processes in men. They have restated the theories in terms of rigorous propositions and hypotheses. Most of their effort will probably have little use to any but the more rigor-minded of the applied social scientists themselves. The book makes rough going for any reader. It shows how "really scientific" we can get about organizational behaviour, but also how cold and lifeless organization appears when reduced to that one dimension of human value.

The Changing of Organizational Behaviour Patterns by Lawrence is, by contrast, a thoroughly readable book. In comparison with any of the other three books here under review, Lawrence's book, by virtue of its readability perhaps, may seem superficial. This is probably a risk any clinical case study runs, and Lawrence's study is of that kind. For the clinical scientist, the profound is found in the ordinary.

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Ambition is in the patient control of ambition. Knowledge is in familiarity.

Lawrence's study was of a concerted effort by a small group of executives to "decentralize" their chain of food supermarkets. The attempted change was essentially from a kind of benevolent autocracy to the assumption of many decision-making and information-supplying responsibilities by employees "down the line" in the organization. This story is reported carefully and in considerable detail by Lawrence. In his final chapter he comments generally on the problem of organizational change and the several dimensions of human behaviour — needs for social satisfaction and individual expression as well as the achievement of organizational purpose—that must be taken into account for effective results.

The Motivation, Productivity, and Satisfaction of Workers by Zaleznik, Christensen, and Roethlisberger is, by this reviewer, most highly recommended. On the other hand, this book will not be easy reading for anyone unfamiliar with other literature in the field of organizational behaviour. The Zaleznik-Christensen - Roethlisberger study combined clinical and analytical methods of research. The book consists of statements of theories from which 31 hypotheses were stated to make some 52 predictions about patterns of membership, productivity, and satisfaction in a factory work group of 50 workers. This was a powerful study, carefully designed, executed, and reported. It merits careful and sincere study by researchers of organizational behaviour and practising administrators. (The authors tried to address both groups). But administrators should be warned about one aspect of the book: many of the authors' findings and their conclusions ask business managers to turn 180 degrees in their ways of thinking about and acting toward the motivation, productivity, and satisfaction of workers.

The final book for review in this group is *Behaviour of Industrial Work Groups* by Leonard R. Sayles. This reviewer regards Sayles' study as one of the mistakes researchers of organizational behaviour can too easily make. Sayles interviewed a large number of business and union officials, asking them a variety of questions about different work groups in their companies. My quarrel with Sayles is that he interpreted his data as data about behaviour in the work groups rather than as data about business and union officials' *perceptions* and *evaluations* of behaviour in different work groups. There is *quite a difference.* Failure to make that discrimination in interpreting his data led him to a fairly one-dimensional view of work group behaviour and casual relationships. It essentially led him into equating grievance activity (is the group a problem for management and for the union?) with behaviour. This error obscured many useful conclusions that could otherwise be drawn from his data. Sayles' sin was being too impatient. He tried to do with interview data more than could be done.

CONCLUSION

These four books represent a reasonably representative sample of the rapidly developing flood of literature that is beginning to appear in the field of organizational behaviour. To the universities, the developments these books represent say: recognize that a field of inquiry is emerging that does not fit into traditional academic compartments. As a true applied science, organizational behaviour crosses several existing boundaries, parti-

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Books for Businessmen — cont.

cularly anthropology, psychology, and sociology, and includes also some researchers in schools of business and public administration and in some engineering schools as well. The formal organizations of universities can facilitate collaboration among those people or make the effort extremely difficult. Let us hope for organizational modifications that promote the former.

To business administrators, the developments the four books represent say: a new field of inquiry is emerging that is committed to questioning all existing assumptions about human behaviour in formally-organized enterprises, i.e. business organizations. As this inquiry gains momentum, as it is doing rapidly, the intellectual and emotional understandings of business administrators will be taxed in many ways. In living through these consequences we should remember two aspects of the emerging field of organizational behaviour: first, the researchers do have, particularly in their clinically-oriented representatives, one foot solidly in the territory of concrete experience — the problems and difficulties of practicing administrators—and findings and conclusions are not spun idly and irresponsibly to the whims of the researchers if they can help it; and second, business administrators also have a foot inside the door of the researchers' planning rooms, which administrators started when they first went to the social scientists with questions of "How to . . .?" when they found the people in their organizations not functioning as their assumptions told them those people should behave.

R. K. Ready,
Associate Professor,
U.W.O.

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Books for Businessmen — cont.

OPERATIONAL RESEARCH IN PRACTICE

Edited by Max Davies and Michel Verhulst, London. The Pergamon Press, 1958, 201 pp., $12.

To most Canadian businessmen, operations research remains "a mystery wrapped inside an enigma". Few firms in Canada engage in any formal activity which might be described as operations research.[1] And few indeed are the businessmen who could even describe what O.R. is, let alone understand how it might be used.

For the uninitiated (in which category the reviewer must be included), *Operational Research in Practice* can be a most illuminating and thought-provoking publication. The book itself is a record of the proceedings of a NATO conference held in France in 1957 and attended by Operational Research experts from the various NATO countries. The main focus of the discussion is on military problems and the application to these of operations research, but many of the problems have close parallels in business. Some of the applications provide much food for thought for possible business usage.

One might expect a volume of this sort to be highly technical and mathematical, but such is not the case. The papers are for the most part readily understandable to any interested layman. They concentrate at all times on concrete *application* of operations research, and thus avoid much of the mumbo-jumbo that so often blocks the unwary reader of articles or books on this subject. There is even a brief, clear and simple explanation of opera-

[1]For example, Douglas Sherk reported in the fall of 1956 that a survey of large corporations revealed only 10 that were engaged in O.R., and that most of this interest had come only since 1952. See "Operations Research in Canada", *The Business Quarterly,* Fall, 1956.

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Canadian Taxation and the Businessman

K. W. LEMON, F.C.A.

BUSINESS LOSSES

Since 1942 the Canadian Income Tax Act has made provision in some form for the deduction of business losses from the taxable income of prior or subsequent years. Prior to 1958, however, losses could be deducted only from profits earned in the same business. This restriction limited significantly the benefits available from the "loss carry-forward" legislation, as a corporation which had extended its operations into new lines of endeavour due to the unsuccessful operations of its original business was denied any deduction from its new profits in respect of losses incurred in its former business.

1958 CHANGE IN LEGISLATION

The 1958 amendments to The Income Tax Act have changed this unfortunate situation so that in the future a business loss may be applied in reduction of a taxpayer's income from *any other* business in the preceding year or during the succeeding five years. It should be noted, however, that the new legislation does not remove completely the previous restrictions, as an exception to the new privilege is made in the case of corporations where more than 50% of the shares have been acquired by new shareholders. In such cases losses may be carried forward only if the corporation continues to carry on the business in which the loss was sustained. This provision is undoubtedly designed to eliminate the trading in charters of "loss companies" so that the potential value of a "loss carry forward" may be realized by new owners.

COMPARISON WITH UNITED STATES PRACTICE

Since 1954, American taxpayers have had substantially the same rules governing loss carry-overs as were granted to Canadian taxpayers in 1958 except in one important respect—operating losses of merged or liquidated companies in the United States can be carried over to the companies into which they have been merged or liquidated and may be offset against the profits of these latter companies. The United States legislation places some limitation on the application of this rule by refusing to recognize the loss carry-over unless after the liquidation or merger there is a 20% or greater continuity of interest by the stockholders of the corporation with the operating loss carry-over.

The present Canadian legislation makes no concessions on this point as specific provision is made that in the case of amalgamations any loss carry-forward is completely lost.

This feature of our Canadian Tax law is another example of taxation policy which, in an attempt to block a loophole which might be taken advantage of by a small minority, imposes a serious penalty on a great many completely legitimate and desirable business transactions. Canadian business men will look forward to a change in this policy which might be evidenced in part by the adoption by our Parliament of the much more reasonable "loss carry-forward" legislation of our good neighbours to the south.

Canadian Law and the Businessman

JOHN P. ROBARTS, Q.C.

The Development of the Guaranteed Title to Land in the Province of Ontario

The Province of Ontario maintains two systems of registering the title to real property, or land. The first and most widespread in the more settled and highly industrialized areas of Southern Ontario provides a means of preserving documents of title to land through registry and recording in chronological order in what is called an Abstract of Title. Once registered, all responsibility of the Registry Office or its officials ceases, and a purchaser or mortgagee must refer to each of the registered documents and satisfy himself as to their validity during a period of 40 years prior to his acceptance of title. This examination includes a review of all transmissions of the property by Will, or by our laws of devolution in the event of no Will, leases, mortgages, sales, pledges, and generally all claims which might give rise to an adverse claim against the property. That this system is cumbersome is admitted, but it is the result of many years of evolution and covers a vast area of our province, which has had literally millions of real estate transactions of one kind or another during the period of 40 years mentioned.

The Land Titles System also provides for registration of documents which are preserved and recorded for all time to show all transactions affecting the land in question, but the Master of Titles, who is the chief administrative officer of the system, has power to refuse registration of what he considers improper documents, or documents revealing improper transactions. Thus, each entry in the Register of a transaction carries with it a guarantee of title, which cannot be defeated unless the holder of the title which is defeated is adequately reimbursed for what must be an error on the part of the Master of Titles who accepted a faulty document or permitted a flaw to develop in the title.

The advantages of this system are obvious, and may be briefly summarized here:

(1) Title is guaranteed from the time of registration.

(2) A fund is established under the Land Titles Act to reimburse anyone who suffers through a fault in a guaranteed title.

(3) Transactions in, or affecting, land are greatly simplified as the need for long searches of title with possible references to the Courts to settle disputed points, is eliminated.

In order to facilitate the entry into the Land Titles System of those parts of Ontario where the Registry Office System has functioned for so many years, an Act entitled "An Act to Provide for the Certification of Plans of Subdivision in Order to Establish Title in Lands" was passed at the Third Session of the Provincial Legislature in 1957. This Act did not come into force until September 1, 1958. What does the Act accomplish and of what benefit is it to the individual and corporate land owner in Ontario?

In essence, it provides for an application which may be made by any owner of land in fee simple for a Certificate of Title. This application includes a solicitor's abstract and certificate, a surveyor's certificate, title documents and certificates as to taxes, executions, bankruptcy, and a fee for registration as set out in the Regulations appended to the Act. This material is examined by an Examiner of Titles, and, if he is satisfied, a Certificate of Title is issued and registered in the proper office. Provision is also made for an Assurance Fund to reimburse anyone who subsequently suffers as a result of any defect in the Certificate of Title.

All the advantages as set out above in the Land Titles System immediately accrue to anyone dealing with the land thereafter. It is felt that the new Act will be used primarily in large subdivisions for either residential housing or commercial or industrial development, where the title to large areas may well rest in one individual or one company charged with the development.

The Act also provides that in certain cases areas may be designated as certification areas, and in such an area no subdivision can be registered other than after the title has been certified. This will allow the Government to force this action where it is considered beneficial.

The Act is new and, thus, its ultimate effectiveness is a matter of conjecture and opinion. It does provide a simplified means of dealing with an old problem in a fast-developing province.

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tions research provided for the non-technical reader.

As this was an international conference, portions of the book are in French, to which the reviewer's high-school training was not always equal. However, by dint of some muddling along, even these articles provided interesting fact and comment. The bulk of the book (perhaps 80% to 90%) is in English.

The individual papers provide many fascinating case histories of the application of O.R. These include a description of its use in World War II by the German Luftwaffe in determining the most effective use of anti-aircraft fire, and in calculating the optimum fighter approach and firing pattern against U.S. daytime bombers. The more current problem of interception of supersonic bombers and missiles by radar-guided fighter planes is also described and discussed, and there is an intensely-interesting article on the use of Games Theory in military training and exercises.

Several problems more directly related to business are covered, including an excellent discussion of how Lockheed Aircraft uses O.R. in product planning, and some of the desirable qualifications of an operational researcher.

David S. R. Leighton,
Associate Professor, U.W.O.

DYNAMIC DECADE

by Eric J. Hanson, McClelland & Stewart Ltd., Toronto, 1958. 314 pp., $5.00.

The discovery of oil at Leduc, Alberta, on February 13, 1947, marked the turning point in the economy of the province. This discovery sparked a fantastic growth in Alberta that shows signs of continuing for many years to come.

continued on next page

The 10 years between 1946 and 1956 are referred to by Dr. Hanson as the Dynamic Decade. In his book he traces the development of Alberta from a debt-ridden province dependent on agriculture and with a declining population to one with only token debt, diversified industry and increasing population. His book examines the profound and extensive changes in the provincial economy and attempts to estimate the income flows generated by the petroleum industry.

The author describes the problems faced by communities adjacent to oil discoveries, and how, 20 months after the Leduc discovery when the province was recovering from the initial impact, the Redwater field was discovered and proved to contain greater recoverable reserves than Leduc. Finally, in June 1953, an even larger field, the Pembina field, was discovered. Refineries and pipe lines began to spring up to handle the flood of oil, bringing with them additional revenues to the people and communities.

Dr. Hanson tells too the story of natural gas in Alberta, how its production has quadrupled during the Dynamic Decade, of the battle for permission to export natural gas and of the problems faced and overcome by those wishing to build gas pipe lines. He predicts that natural gas production in Alberta in the early 1960s will reach five times the 1956 level and will provide the province with another dynamic decade.

Dr. Hanson, a Swedish-born economist at the University of Alberta, has, in his *Dynamic Decade,* a book well worth reading by both those interested in the oil industry and those who enjoy an interesting story.

Andrew Grindlay,
Instructor, U.W.O.

THE SCANLON PLAN

A Frontier in Labor-Management Cooperation

Edited by F. G. Lesieur. Published jointly by The Technology Press of Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York. 169 pp.

It is significant that the passing of a former union official could be lamented equally by union and management, but such was the case with Joseph Scanlon. A prize fighter, cost accountant, steelworker, local union president, and Research Director for the United Steel Workers, Scanlon joined the Industrial Relations Department of the Massachusetts Institute of Technology in 1946. He remained there until his untimely death in January, 1956.

This book is a tribute to Joseph Scanlon, composed of a series of articles which outline and evaluate the history of the man and of the union-management cooperation concept that was so much a part of his life.

Following the largest of several Scanlon Plan Conferences at M.I.T. in 1957, Fred Lesieur, M.I.T. Industrial Relations Lecturer and former associate of Scanlon, decided to gather together and edit a representative appraisal of the plan, from a union, management, and university viewpoint.

Lesieur was formerly local union president at the Lapointe Machine Tool Company in Hudson, Mass., and was intimately acquainted with Joseph Scanlon from the time that the latter instituted his plan in that plant. We shall examine that system in operation.

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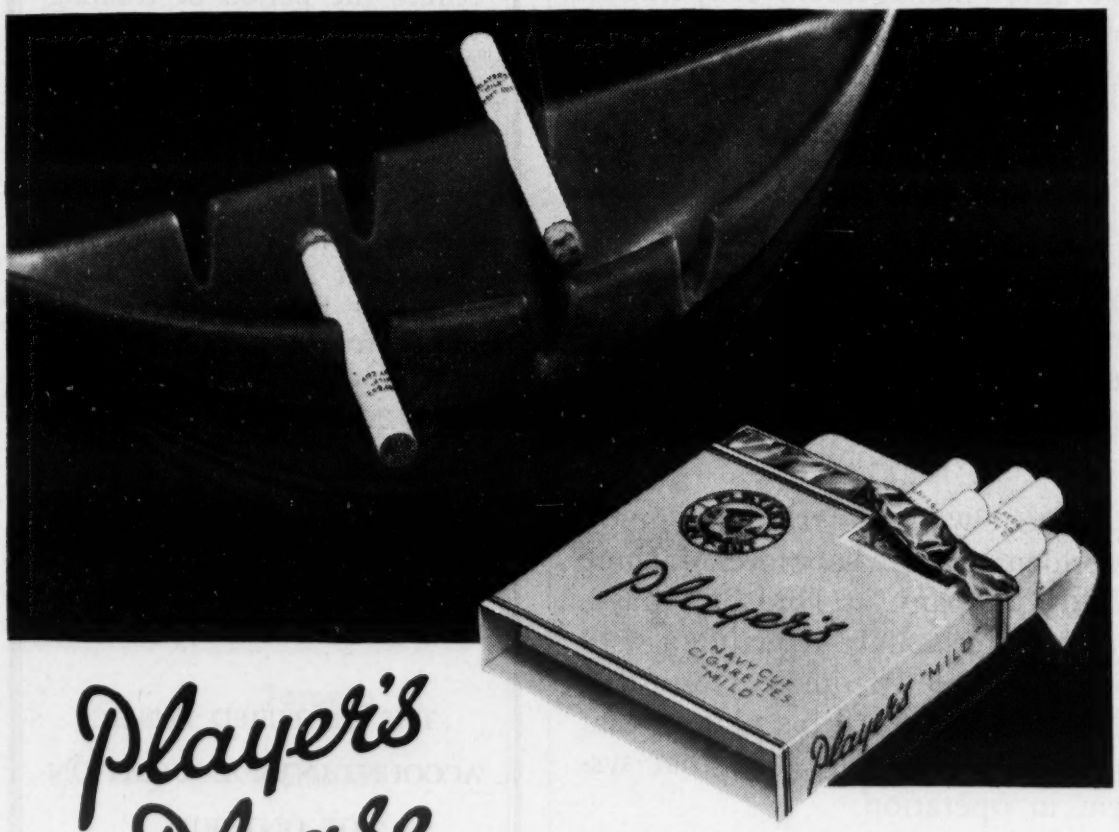

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labour cost to total production value, the latter figure being equal to monthly sales plus or minus the change in inventory. For example, if total shipments for a given month were $70,000 and inventory change plus $30,000, total production value for that month would be $100,000. Joint union-management determination set the wage percentage of this total at 38%. The "normal" payroll would then be calculated at $38,000. If the actual payroll were only $35,000, the difference of $3,000 would go to the workers as their bonus.

In this case labour gets ALL the labour-saving. Management's profit is derived from increased sales with no corresponding increase in overhead and labour costs. It is basic to the system that the bonus be given to all the workers and not just those individuals who made productivity suggestions. The bonus is distributed monthly as a calculated percentage of basic pay. Everyone is included from the president on down.

The increased productivity of the shop under the Scanlon system is not achieved by a speed-up in the ordinary sense of the word. Possibly the men work harder, and certainly they work more steadily, but the rise in efficiency is brought about chiefly by suggestions as to how time and effort can be saved. Reward does not go to the individual alone but to the entire shop. On the one hand this eliminates jealousy; on the other, it opens up for the ordinary worker a kind of social or community incentive.

In all cases introduction of the plan is incumbent upon three broad conditions:

1) A formally established "area of collaboration" between union

continued on next page

and management, for co-ordinating efforts throughout the whole organization. This must be accomplished without undermining collective bargaining or weakening the local union. The plan has never been successful when applied as an anti-union measure.

2) A meaningful, realistic, common objective (the 38% ratio) in terms of which such collaborative efforts can be objectively measured.

3) A psychologically adequate system of rewards—non-economic as well as economic—for a wide range of contributions to the effectiveness of the enterprise. (Traditional incentive wages, suggestion system awards and even profit sharing are considered quite inadequate in terms of modern psychological theory.)

Scanlon underscores the necessity of a strong intelligently-led union countered by a strong, positive, yet understanding management. That management must learn to understand the union viewpoint. But it is not a one way street. When the union and the workers feel that that management is being sincere in wanting to enlist their help in facing problems they are more than willing to pitch in constructively. Now they are aware of the full range of company problems. As they find their ideas welcomed and accepted, workers have gradually assumed a more and more responsible attitude towards production problems.

All this takes intelligent thinking and planning of the highest order on both sides. One of the basic reasons advanced for the few specific applications of the Scanlon Plan is the lack of maturity on the part of cooperating parties in their relationships. Most managements are reluctant to make the necessary

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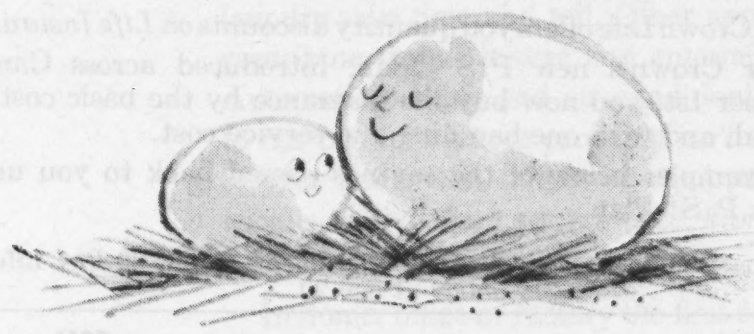

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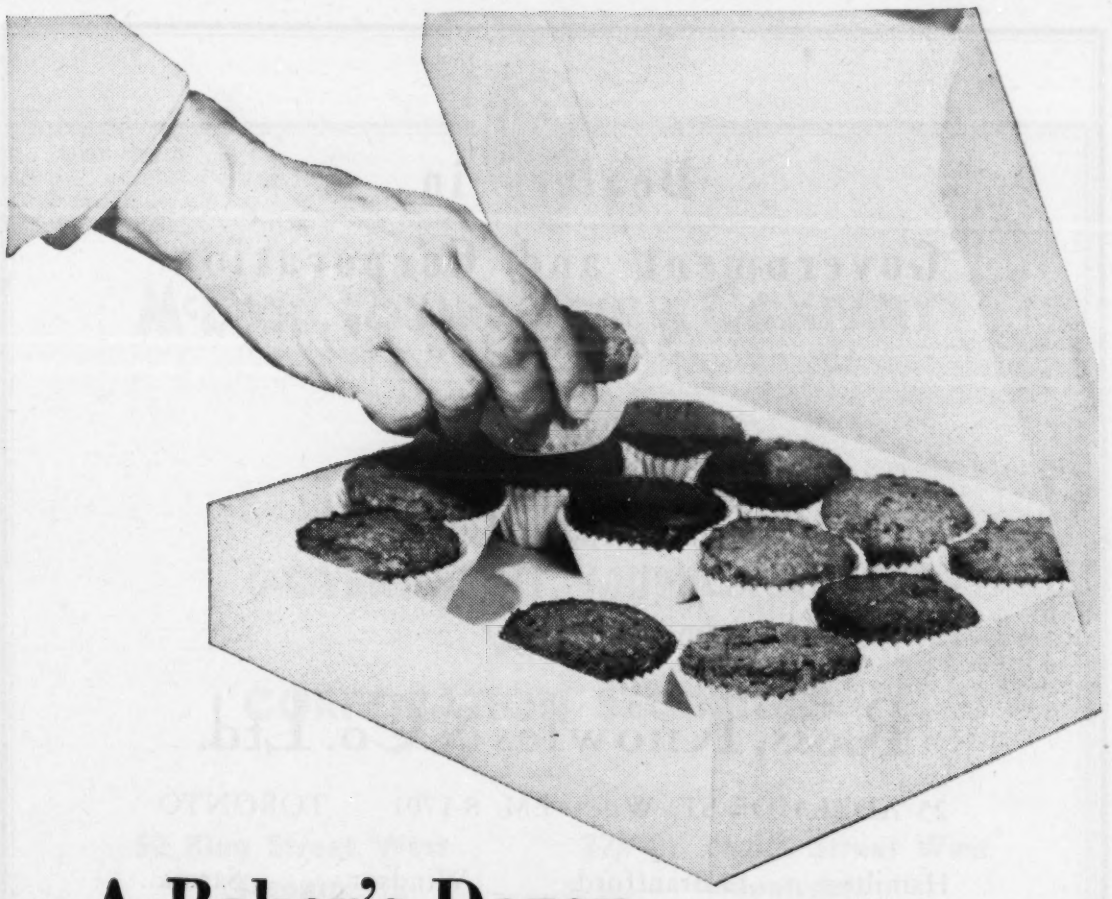

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concessions. Most unions do not possess the quality of leadership necessary to hold up their end of the bargain.

However, management and union officials alike, in the firms where the plan has operated successfully, hasten to illuminate the benefits that have accrued to both sides, with no reference as to who has gained most or who has contributed most.

Company case histories are included in a 40-page appendix.

Joseph Scanlon's contribution is perhaps best phrased by Douglass McGregor, formerly head of the Industrial Relations Section at M.I.T., and now President of Antioch College. "Scanlon's lasting contribution is his recognition — now effectively demonstrated in action — that one cannot successfully tackle this central task of management with gimmicks or procedures or programs. The real task of management is to create conditions which result in genuine collaboration throughout the organization. To create such conditions is to establish a way of life. This is the central conclusion to which the findings of social science are pointing today. And this is the lesson that Joseph Scanlon taught us all."

This is a thought-provoking work which deserves a place in every company library. Granting that the plan formula may not be applicable in all cases, it certainly gives any firm food for thought if it sincerely desires to improve employee relations.

R. E. Sproule,
Instructor, U.W.O.

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